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1 UNITED STATES DISTRICT COURT  
2 SOUTHERN DISTRICT OF NEW YORK  
3 -----x

4 SECURITIES AND EXCHANGE  
5 COMMISSION

6 Plaintiff,

7 v.

23 Civ. 1346 (JSR)

8 TERRAFORM LABS PTE LTD. , et  
9 al.

10 Defendants

11 -----x  
12 New York, N.Y.  
13 March 29, 2024  
14 9:29 a.m.

15 Before:

16 HON. JED S. RAKOFF

17 District Judge  
18 -and a Jury-

19 APPEARANCES

20 UNITED STATES SECURITIES AND EXCHANGE COMMISSION  
21 Attorneys for Plaintiff  
22 By: JAMES P. CONNOR  
23 DEVON STAREN  
24 CARINA CUELLAR  
25 LAURA E. MEEHAN  
CHRISTOPHER J. CARNEY  
ROGER LANDSMAN

03TASEC1

## 1 APPEARANCES (Cont'd)

2 DENTONS US LLP  
3 Attorneys for Defendant Terraform  
BY: LOUIS A. PELLEGRINO III  
4 DAVID KORNBLAU  
MARK CALIFANO  
DOUGLAS W. HENKIN  
5 MATTHEW A. LAFFERMAN  
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6 MELISSA GOMEZ NELSON  
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8 KAPLAN HECKER & FINK LLP

9 Attorney for Defendant Kwon  
BY: MICHAEL FERRARA  
10 CHRISTOPHER MOREL  
DAVID E. PATTON  
11 ANDREW CHESLEY  
SEAN HECKER  
12

13 Also Present:

14 Shadow Haywood, SEC Trial Assistant

15 Armando Aquino, Defense Trial Assistant

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03TASEC1

1 (In open court; jury not present)

2 (Case called)

3 THE COURT: Please be seated. All right. Where do we  
4 stand on the 5th Amendment.

5 MS. CUELLAR: Your Honor, I believe -- oh the 5th  
6 Amendment. The parties are still discussing. We don't have a  
7 resolution I believe on the issue yet. The SEC's position is  
8 still that it would prefer to have the stipulation and play the  
9 video clips, which we have cut down substantially. And all  
10 together, for the three witnesses, I think we'd like to keep it  
11 to 45 minutes or less.

12 However, the stipulation that we understand the Court  
13 proposed yesterday would also be acceptable to the SEC and then  
14 we would not play video. But our understanding is the  
15 defendants would like a different type of stipulation and we  
16 would not agree to the type of stipulation they would like.  
17 And I can ask them to represent the type of stipulation.

18 THE COURT: Yeah, let me hear from defense counsel.

19 MR. CALIFANO: My apologies, your Honor. I want to  
20 make sure I understand the proposal that the Court had on the  
21 stipulation because I don't want to pass an opportunity to try  
22 to resolve this. So I think if Ms. Cuellar could just confirm  
23 for me, my understanding, I'm not sure I understand what  
24 exactly the terms of the Court's stipulation would be. Our --

25 THE COURT: I haven't suggested any stipulation.

03TASEC1

1 MR. CALIFANO: Okay.

2 THE COURT: I just left it to you guys.

3 MR. CALIFANO: I'll make it very clear, your Honor, to  
4 put a point on it. The stipulation that the defendants would  
5 agree to would be the stipulation that indicates that these  
6 witnesses, particularly Mr. Kariya and Mr. DiSomma, intend to  
7 assert the 5th to any questions asked. We had proposed, and  
8 that is part of what the stipulation that the SEC has, we would  
9 propose that with respect to the SEC's desired framed specific  
10 questions, we would be willing to have the SEC include those  
11 questions in the stipulation, provided we are able to include  
12 our own questions in response to that to properly frame this.  
13 That's what's important, your Honor. If we had a written  
14 stipulation like that, the defendants would be fine with that.  
15 And we would be happy to do it for the witnesses involved in  
16 the case.

17 THE COURT: Well, I'm not sure. These are questions  
18 that both you and the SEC put at the deposition?

19 MR. CALIFANO: Your Honor, the problem is, at the  
20 point in time at which we had those depositions, a lot of  
21 information that we have gathered since that point about what  
22 jumped in and how it did, was not available. And the questions  
23 we asked during the deposition were primarily used to frame the  
24 LiButti issue. We were not able to ask all the questions we  
25 would like to ask about the ultimate issues.

03TASEC1

1           That's the problem with using the deposition video  
2 because we don't have those questions to respond to those. We  
3 would like that opportunity and we feel that's a fair thing to  
4 ask given this is going to be argued before the jury, about  
5 whether or not the jury may find an inference.

6           THE COURT: What I'm confused about is are you saying  
7 that you want to put in the stipulation that the witness would  
8 take the 5th with respect to a question where it was never put  
9 to the witness?

10          MR. CALIFANO: Yes, your Honor. That's what we  
11 would -- if that's not appropriate, your Honor, then we'll have  
12 to call the witnesses because we don't have those questions in  
13 the deposition.

14          THE COURT: Yeah.

15          MS. CUELLAR: Your Honor, it's our position that the  
16 defendants don't get to ask the questions because they have not  
17 met the Libutti factors, so they would not rate the inference.  
18 Therefore, any answers to their questions are irrelevant and  
19 not probative.

20          THE COURT: I'm sorry, because?

21          MS. CUELLAR: Because they do not rate the inference  
22 because they have not met the Libutti factors. Any answers to  
23 their questions are irrelevant.

24          THE COURT: In what way have they not met the factors?

25          MS. CUELLAR: Well, your Honor has said that you are

03TASEC1

1 leaning in the direction of finding that the SEC has met the  
2 LiButti factors.

3 THE COURT: Yeah, I'm still leaning that way.

4 MS. CUELLAR: So if we met the LiButti factors, the  
5 defendants can't possibly meet the LiButti factors because --  
6 because we've met the LiButti factors. It's sort of a zero-sum  
7 game.

8 THE COURT: Well, I guess the question is this,  
9 normally, and by which I mean in the relatively few cases where  
10 this issue has arisen, it's been a waste of time to call the  
11 witnesses because all they do is sit there and take the 5th as  
12 to every question. And inevitably in that situation, the one  
13 side, the side calling him says "isn't it true that X," and  
14 they take the 5th, thereby giving rise to the permissible  
15 inference that the answer would have been yes. And then the  
16 other side says "and isn't it true that non-X." And they take  
17 the 5th again. And then the defense says, well, you see  
18 there's no basis for raising an inference because they're  
19 taking the 5th across the board.

20 There is case law, though it's quite limited is my  
21 recollection, that suggests that nevertheless because of how  
22 the witnesses are positioned, the inference is really only  
23 available to one side. And that would be the subject of a  
24 court instruction. But I don't know that that requires  
25 anything more than a stipulation, that in my hypothetical,

03TASEC1

1 Jones was the executive vice president of company X. Company X  
2 is the defendant in my hypothetical case. Jones, it's  
3 stipulated by the parties and by his counsel, would take the  
4 5th to all questions involving any alleged fraud at the X  
5 company. And the jury may if it wishes infer an adverse  
6 inference, but they're not required to. Something like that.  
7 That's what I think the law is but I'm willing to be educated  
8 to the contrary if someone has some case law to the contrary.

9 MS. CUELLAR: Your Honor, we concur with your  
10 assessment of the case law, as of course your Honor knows a  
11 tremendous amount about the case law. I think the SEC is  
12 comfortable with the verbiage that you were proposing to  
13 instruct the jury. It does not believe the witnesses need to  
14 attend.

15 THE COURT: Okay. So let me see what defense has to  
16 say about all of this.

17 MR. CALIFANO: Your Honor, if we look at -- first of  
18 all, I think, your Honor, that case law like 650 5th Avenue  
19 clearly counsels that stipulations are a preferred form of  
20 presenting this to the jury.

21 THE COURT: Yeah. Although, I mean there's nothing in  
22 that case that says if the parties can't stipulate that you  
23 can't call the witness. They suggest that a stipulation is  
24 preferable, but they don't say, you know -- no court in the  
25 world can require a party to stipulate.

03TASEC1

1                   MR. CALIFANO: I understand that, your Honor. And I  
2 think the concern we have, even with the stipulation that  
3 you've described, especially the end of that stipulation, which  
4 is to suggest that any questions asked with respect to the  
5 alleged fraud means that -- it's still a framing issue and the  
6 problem with the framing and with the questions of any lawyer  
7 are they are not evidence. The evidence here is that  
8 assertion.

9                   The reason we have a problem with the way that  
10 stipulation is phrased is because it is focused on the fact  
11 that questions asked about the fraud would be responded to by  
12 an assertion of the 5th. And if that's the case, we want to  
13 call those witnesses so that we have the opportunity to at  
14 least ask a few questions to complete the framing. Because  
15 really what we're talking about once that happens is the  
16 framing of that issue before the jury.

17                  THE COURT: Yeah. So I think we need to move on. We  
18 can't take more time right now. Why don't we do the following,  
19 I know you were planning to spend the weekend going clubbing,  
20 but in the alternative, why don't you send me each your  
21 proposed stipulations and any case law that you want many me to  
22 take a look at.

23                  Again, I can't force a stipulation, so if we have to  
24 call these witnesses -- now, the witnesses have moved to quash  
25 the subpoenas. Two of them. And so we at least need to let

03TASEC1

1 them know where things stand. But what I'll do is I'll have my  
2 law clerk advise them that the matter will be resolved one way  
3 or the other no later than Monday. And if they have to appear,  
4 they'll need to appear say by Wednesday latest. And then I'll  
5 take a look at the stipulations and the case law and then we  
6 can discuss it first thing Monday and see where we stand.

7           Okay. Anything else?

8           MR. PELLEGRINO: Yeah, just briefly, your Honor. I  
9 have a motion related to Paul Kim who's being examined now.  
10 It's a small, but important motion for reconsideration on one  
11 objection that your Honor considered. And may I hand something  
12 up related to that, your Honor?

13           THE COURT: Yeah.

14           MR. PELLEGRINO: So, your Honor, on the left side --

15           THE COURT: Hold on. Hold on. Let me just take a  
16 look at this.

17           MR. PELLEGRINO: Sure.

18           THE COURT: Okay. Go ahead.

19           MR. PELLEGRINO: Let me start with the right side,  
20 your Honor. On the right side, that is an excerpt from  
21 Mr. Kim's deposition who's about to continue his testimony in a  
22 moment. Your Honor excluded that on the grounds of leading,  
23 argumentative, and speculation. Those were the grounds the SEC  
24 asserted. We can talk about those objections. But my motion  
25 is to reconsider particularly based on what was admitted on the

03TASEC1

1 left-hand side, which was Mr. Myung's testimony yesterday going  
2 to the ultimate issue about whether Chai was in fact real or  
3 not real. He says that Chai never settled with any of those  
4 merchants in crypto assets. Mr. Kim, on the right-hand side  
5 directly addresses that in his deposition.

6 Again, it's the ultimate issue in the case and we've  
7 been talking about opening the door throughout this week. So  
8 our motion is based on the fact that Mr. Myung testified about  
9 this issue and I believe, as you said yesterday, the jury  
10 should be allowed to hear evidence on both sides and weigh the  
11 assertions as to whether Chai was in fact --

12 THE COURT: As you can see from my rulings on all  
13 these depositions, I've if anything leaned over backwards to  
14 include over objection a great deal of what the defense  
15 offered. For example, with respect to Do Kwon, I approved  
16 every single suggestion from the defense notwithstanding the  
17 nonfrivolous objections made by the SEC.

18 So, remind me, because I don't have it in front of me.  
19 The objections to this -- this was a question put by defense  
20 counsel?

21 MR. PELLEGRINO: Yeah, it was our representative who  
22 put the question to him, your Honor.

23 THE COURT: Yes. And so it is flagrantly leading.  
24 It's also a multipart question. Although I'm not sure there  
25 was an objection on grounds of form, and that might be

03TASEC1

1 therefore waived.

2 And something that the jury has already heard a lot  
3 of, but from witnesses who could be more cross-examined about  
4 it because they're right here in court, is the ambiguity that  
5 has emerged as what "settlement" means in this context. So why  
6 isn't this a flagrantly leading question?

7 MR. PELLEGRINO: Well, your Honor, as we've already  
8 heard because we've seen half of his testimony roughly, the way  
9 the questions were put to this witness in Korea, almost all of  
10 them are compound or leading. I think we just have to deal  
11 with the way that they're put to that witness in Korea.

12 THE COURT: Again, because I don't have in front of me  
13 what were the other objections that were raised.

14 MR. PELLEGRINO: They were leading, argumentative,  
15 calls for speculation.

16 THE COURT: Yeah. Well, it doesn't call for  
17 speculation. I think it is argumentative. Any question that  
18 begins with the words "to sum up" is argumentative on its face.

19 But let me ask SEC counsel, because again, I don't  
20 have the transcript right in front of me: Why aren't those  
21 arguably objections to form? And if they weren't raised at the  
22 time then they've been waived.

23 MR. CARNEY: Your Honor, because to me, it's not clear  
24 that that proceeding, which took place before a Judge in  
25 Korea --

03TASEC1

1                   THE COURT: You're right. So you weren't there to  
2 make an objection, or at least it's a much more awkward  
3 situation. The only time it's not awkward to object to a  
4 Judge's question is in this trial.

5                   MR. CARNEY: Your Honor, yeah, what I was suggesting  
6 is that from reviewing that transcript, it did not appear that  
7 there were any objections made to any questions. So it wasn't  
8 clear to us that there was even an opportunity, but your Honor  
9 might recall that our objections to the testimony they  
10 designated were sparring, I'd say, and this one stood out  
11 because for the reason --

12                  THE COURT: I think the bottom line is that this is  
13 really just a summation masquerading as a question, and I'm not  
14 going to permit that. So the objection is sustained.

15                  MR. CARNEY: Thank you, your Honor.

16                  MR. PELLEGRINO: May we mark that as a Court Exhibit,  
17 your Honor, please.

18                  THE COURT: Yes, of course.

19                  MR. PELLEGRINO: Thank you.

20                  THE COURT: This is Court Exhibit 3. As opposed to  
21 Plaintiff's or Defendants' Exhibits 2,745. I'll give to it to  
22 my law clerk.

23                  I take it the jury is here?

24                  THE DEPUTY CLERK: Yes.

25                  THE COURT: Let's bring in the jury and continue with

03TASEC1

1 the playing of the deposition.

2 (Continued on next page)

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03TASEC1

"Kim"

1 (In open court; jury present)

2 THE COURT: Good morning, ladies and gentlemen.

3 You're so good at being on time. You may wonder why we are  
4 starting 15 or 20 minutes late. The answer is we all get  
5 together at 9:00 a.m. and discuss legal matters and sometimes  
6 those are difficult to resolve until we've heard fully from  
7 both sides. So you have to forgive us for not starting  
8 promptly at 9:30, but we are ready to proceed now. And I will  
9 note for the record the really smashing outfit of Juror No. 8.  
10 I'm blown away by it.

11 Let's continue.

12 MR. LANDSMAN: So we're going to continue with the  
13 testimony of Paul Kim.

14 THE COURT: Paul Kim, yes.

15 MS. LANDOW: Good morning. I'll introduce myself  
16 Alyssa Landow, counsel for defendant Terraform Labs.

17 (Reading)

18 "Q. Do Kwon practically did not involve in the work going on at  
19 Chai Corporation after the split in early 2020?

20 "A. That is not an area of my knowledge. I don't think he did  
21 because he was too busy. I saw him every day in the office.

22 "Q. Are you saying he "was not involved"? Or "you were engaged  
23 in development only that you did not know what the bosses were  
24 up to - whether he was involved or not?"

25 "A. I'm not him so I don't know 100 percent. But that is my

03TASEC1

"Kim"

1       opinion, at least. "I think he was not involved."

2       "Q. You explained earlier that when the two companies split,  
3       they parted ways due to their different pace as Terra  
4       blockchain had to be quick and active while the Chai mobile  
5       payment business operated within the regulatory laws under a  
6       license or registration from the Financial Supervisory Service.  
7       In that case, were there ever talks internally along the lines  
8       of "this is the only way due to this regulatory issue. This  
9       regulatory issue makes it is difficult to bring Chai Pay  
10      along?"

11      A. I don't really know about those things since I was busy  
12      with work. There wasn't such a vibe. Within my work scope.

13      "Q. Are you saying that you were not involved in talks about  
14      regulatory issues since you only engaged in technical matters  
15      and you never heard talks about "splitting up due to  
16      regulations?" How can we summarize your stance?

17      "A. To explain precisely, in order to be a mobile payment  
18      service provider, the regulation compliance requirements are  
19      quite strict, and it was my first time. So, on a personal  
20      level, since the technical aspects and infrastructure  
21      management had to comply with regulations, I put in my utmost  
22      effort to comply with the regulations such as network  
23      separation. Despite extremely uncomfortable circumstances for  
24      a computer engineer, I tried so hard at Chai to comply with  
25      regulations as I recall, and this was my personal experience.

03TASEC1

"Kim"

1 "Q. Were you the lead of the infrastructure team?

2 "A. Yes.

3 "Q. Did the infrastructures team's work include building a  
4 robust technical foundation for the Terra ecosystem?

5 "A. Yes, correct.

6 "Q. I will move onto the question about the LP server. Number  
7 42, what is the LP server?

8 "A. LP server is a project that receives ledger information  
9 from Chai and generates KRT transactions on the Terra  
10 blockchain.

11 "Q. It receives ledger information from Chai and generates KRT  
12 transactions on the blockchain?

13 "A. Yes. To add to that, it was designed that way since the  
14 initial phase of the Chai Pay design. But the operator of the  
15 LP server was Gaza Labs.

16 "Q. What are the processes and resources, such as code,  
17 databases, server hosting services, hardware, etc., that were  
18 required or used for the LP server's functionality?

19 "A. As I've mentioned earlier, the LP server was run on the  
20 Naver Cloud Platform, and then there were components necessary  
21 to run the LP server on Chai's end, and on Chai's end, the  
22 components required for running the LP server were operated  
23 together within Chai's infrastructure. Do I have to tell you  
24 the specs too? In the Linux operating system.

25 "Q. In your role as Terraform's chief engineer, did you

03TASEC1

"Kim"

1 interact with the LP server?

2 A. As a member of Terraform Labs Korea, I did monitoring,  
3 maintenance and repair of the LP server.

4 "Q. You continued to handle maintenance and repair tasks even  
5 after moving to Terraform Labs Korea. That is what you are  
6 saying, correct?

7 "A. Yes, correct.

8 "Q. In fact, you created the LP server, correct?

9 "A. Yes, I wrote the code.

10 "Q. Then who asked you to create the LP server?

11 "A. As I've already told you, in the initial ideation phase,  
12 when it comes to the design itself, be it database design or  
13 API server development, Chai was developed with the linkage to  
14 the Terra blockchain in mind. No one asked me to create it.  
15 We discussed "how can we make this"? And then, "for this, can  
16 I do it this way?" I asked one by one, "can I do it this way,  
17 can I do it that way?" This is how decisions were made, and I  
18 wrote the server implementation code accordingly. Rather than  
19 someone giving me a direction or a request, it was a  
20 prerequisite, so I made it on my own without anyone asking me  
21 to.

22 "Q. Did anyone else help you?

23 "A. Someone helped me with a little bit of bug fixes. When  
24 something didn't work well, Yun Yeo gave almost 1% help and I  
25 made the entire 99 percent.

03TASEC1

"Kim"

1 "Q. What was the LP server's purpose?

2 "A. The purpose of the LP server is to play the role of  
3 receiving changes to the ledger information from Chai and  
4 uploading KRT transactions on the Terra blockchain.

5 "Q. Did you say KRT transactions were generated by receiving  
6 changes to the ledger information from Chai?

7 "A. Yes.

8 "Q. What does it mean to generate KRT transactions? The entire  
9 ledger is in Chai, right?

10 "A. No, the KRT ledger for Chai is on the Terra blockchain, and  
11 the ledger for Chai is on Chai's database server.

12 "Q. But you said the LP server receives ledger information from  
13 Chai, right?

14 "A. Yes.

15 "Q. The ledger information is in Chai - doesn't this mean that  
16 the ledger is Chai's ledger?

17 "A. Yes. Withdrawal, top-up, cancellation, things related to  
18 settlement with merchants in addition to payments. . . all such  
19 information makes changes to Chai's ledger. Such changes are  
20 received by the LP server, which then creates a linked KRT  
21 transaction. A transaction function called multisend is used  
22 to rearrange the information, and there is a special algorithm.  
23 It plays the role of making such information into a blockchain  
24 transaction.

25 "Q. What I want to know is, the LP server receives the

03TASEC1

"Kim"

1 transactions that are already on Chai's ledger and brings over  
2 the transactions to express them on the blockchain. To put it  
3 in simpler terms, I will just change the question. If KRT  
4 transactions on the blockchain or the LP server don't exist,  
5 does the payment not go through on Chai? If the LP server is  
6 down or nonexistent, would this cause disruption for ordinary  
7 people making transactions on Chai or not?

8 "A. Some parts would be disrupted, yes, they would. This is  
9 where I would put in a lot of work as an engineer. Especially,  
10 in case Chai or Terra faces failure or disaster, or in case  
11 either of them has a bug, in order to ensure that at least this  
12 ledger information remains perfect and that the function runs  
13 perfectly, I created queues on both sides. Such steps required  
14 way too much effort to be underestimated. I designed and  
15 created a robust structure, so it is not something that can be  
16 underestimated.

17 "Q. Where were the various components of the LP server located  
18 or stored?

19 "A. It sounds like a redundant question. There is something  
20 called LP dispatcher within the Chai infrastructure, and there  
21 is a queue for that LP dispatcher. Next, there is an LP module  
22 in Chai's API server. There are a total of three things. If  
23 Chai's API server enters data into the LP queue, the queue  
24 layer, through the LP module, the component called LP  
25 dispatcher transmits the data in the queue layer to the LP

03TASEC1

"Kim"

1 server on Gaza Labs' hosting server, puts the data on a  
2 different queue layer on LP's end, which is called WAL. Write  
3 Ahead Log.

4 "Q. Could you repeat? W . . .

5 "A. WAL, Write Ahead Log. This queue layer is called WAL in  
6 engineering terms. WAL, write ahead log.

7 "Q. Could you repeat one more time? W . . .

8 A. Write ahead log. That is where the data goes before the LP  
9 server digests or processes the data. That was how things were  
10 located and operated.

11 "Q. Did you say there were three LP components? Could you name  
12 them once again?

13 "A. I think there were a total of five.

14 "Q. Five? Could you just simply name the five components once  
15 again?

16 "A. There is the LP library module in the API server within  
17 Chai's infrastructure, and on Chai's end, the LP queue, queue  
18 layer in a database called Redis server. The LP queue that  
19 played the role of Write Ahead Log.

20 "Q. Where were the components above hosted?

21 "A. Chai was on Chai's Naver Cloud Platform, and on Gaza Labs'  
22 end, there is a Naver Cloud Platform. There was a Naver Cloud  
23 Platform that was owned by each.

24 "Q. Both used the Naver Cloud Perform. Anyway the respective  
25 hosting account was under each one's name. There was one under

03TASEC1

"Kim"

1 Chai Corporation's name, another under Gaza Labs' name. Is  
2 this what you are saying?

3 "A. I think I would be able to answer better if I you clarify  
4 the intention of your question. If I get into it completely  
5 technically, there are some differences to be exact. It is  
6 true that we did something with the Naver Cloud Platform, but  
7 Chai Corporation did something called a hosting service rack  
8 lease, which is a slightly different arrangement. Do you need  
9 this level of details in the answer? If I understand your  
10 intention, then I can. . .

11 "Q. Who did you communicate with about the LP server?

12 "A. I talked to Do Kwon about how it should be linked only and  
13 I handled all the actual development work.

14 "Q. Did Do Kwon supervise the creation of the LP server?

15 "A. He was not involved in writing the code for the LP server  
16 at all, but simply told me the specs. He didn't supervise.  
17 Since what I made is transparently public on the blockchain, do  
18 Kwon simply checked whether I did a good job.

19 Q. Did Do Kwon explain why he was so interested in the LP  
20 server?

21 "A. The reason for him being so interested. Interested. . .

22 "Q. The purpose of the LP server. . .

23 A. I think he must have been interested because the LP server  
24 played the role of linking Chai's mobile payment service to the  
25 Terra blockchain.

03TASEC1

"Kim"

1 "Q. What was the relationship between the LP server and Chai?

2 "A. As for the LP server, Chai's API server through the LP  
3 module . . . it is actually the same question. It was there  
4 because the data that was passed on through the LP module,  
5 through the LP dispatcher to the LP server was processed on the  
6 Terra blockchain.

7 "Q. You're saying that the answer is the same as what was asked  
8 before. I will take it as that. For number 47, the answer to  
9 the earlier question will do. In that case, did the LP server  
10 copy transactions onto the Chai blockchain?

11 A. No. You can't deem it as simple copying. Should I explain  
12 why?

13 "Q. If it's not copying, why can't we see it as copying?

14 "A. If the purpose was to simply copy, I would not have worked  
15 so hard to make the algorithm. All the complex process of  
16 designing against all potential failure, connectivity issues,  
17 put WAL queue and queue layers on both ends, and then the  
18 multisend . . . Take blockchain for instance, since blockchain  
19 at the time did not have such great capacity for processing  
20 transactions there was the batch algorithm. We couldn't make  
21 that without the batch algorithm that created multisends. This  
22 is not something that can be reduced to simply copying.

23 "Q. Are you saying that it wasn't copying because there was a  
24 conversion process that used a certain blockchain technology or  
25 algorithm?

03TASEC1

"Kim"

1 A. Yes, even the originals are different. For instance, when  
2 you say copying, if you copy a document, the two documents  
3 should have the same content, right? But since Chai had a lot  
4 of additional information for mobile payment service and the  
5 blockchain only handles the pure ledger information, the two  
6 data have different raw data. The form is different, the data  
7 structure, content structure are different.

8 "Q. You mean it was not mere copying because there was a  
9 process where information is extracted and converted?

10 "A. Yes.

11 "Q. Who provided you or Terraform Chai's transaction data? Who  
12 provided Chai's server data in relation to the LP server?

13 "A. At the time of Chai's launch I was affiliated with Chai  
14 Corporation, and as a member of Chai Corporation I developed  
15 the LP server. But after I left, the person in charge of  
16 engineering related to the LP server, the part that is linked  
17 to Terra, was JiHoon Kim, at Chai. I worked with Kim, when I  
18 was still working at Chai, I worked with JiHoon Kim, and JiHoon  
19 Kim took over my work after I moved to Terraform Labs.

20 "Q. For this one, can you explain the process of how what's  
21 been approved goes to the merchants?

22 "A. Merchants? Oh, with the merchants, yes. Chai must have  
23 had a settlement process when it comes to the merchants, right?  
24 A feature that I made for that function is where Chai's admin  
25 presses a button once a settlement is complete, the person in

03TASEC1

"Kim"

charge does so. Once the button is pressed, there is an identical settlement function on Chai's API server, and once that function is called, the changes to Chai's ledger information in that function are processed, and likewise, it is made so that a Terra transaction that corresponds to the settlement on Chai's end is generated identically through the LP module. This is how you can see it.

"Q. Did the LP server receive and process in real-time Chai's transaction data involving customers and merchants? Or was there a time gap?

"A. The goal was to process in real-time.

"Q. If that was the goal, in reality, was it processed in real-time? Or were changes done and made after the transaction was already finished?

"A. No. I don't know what the criteria for real-time is, but I made it so that it would be done within a few seconds. When there was some sort of a failure or an upgrade of the main Terra blockchain or Chai's maintenance, during such maintenance periods, of course it didn't happen. But in a normal situation, it was processed in real-time.

"Q. You used the term normal situation, meaning that there were abnormal situations. As you just said, I am aware that there were quite a few times where the LP server did not operate due to an upgrade or a failure. Then, in such cases, did transactions all take place with absolutely no connection to

03TASEC1

"Kim"

1 the LP server or the blockchain, and the completed transactions  
2 were used to create KRT transactions much later in a  
3 retroactive manner?

4 "A. No, they weren't made retroactively. As I said earlier,  
5 WAL, I made queue layers on both sides for what is called  
6 durability in English of the content. If you search up WAL,  
7 its purpose will come up. In case such failure situations  
8 arise, in computer engineering, we use such content structure  
9 or architecture so that the data would not be lost and so that  
10 KRT transactions can catch up with all the data on Chai's  
11 ledger information once the abnormal situation is resolved.  
12 This was the design by which it operated. Also, for instance,  
13 if the data is not entered in the queue layer in the API  
14 server, the payment fails. Therefore, input into the queue  
15 layer includes ensuring that there won't be a problem in such  
16 failure situations.

17 "Q. Do you mean, in those cases, that payment itself was  
18 rejected at Chai?

19 "A. I don't know about that, but I think there were instances  
20 where Chai did not send over the data, the dispatcher stopped  
21 working. So, since the LP server couldn't receive the data and  
22 didn't have the raw data or any information, it wasn't able to  
23 make the Chai KRT transaction. So, at the time, I told JiHoon  
24 Kim "I don't think the data is coming over," and JiHoon Kim  
25 said "I'll check," and the problem was solved as far as I

03TASEC1

"Kim"

1 remember.

2 "Q. You said it was copied in a multisend method transaction.

3 Well, what is the multisend method?

4 "A. Multisend method, where is this term coming from?

5 "Q. Multisend.

6 "A. In order to transfer crypto tokens from one wallet to  
7 another a transaction called send -- just send, not multi -- is  
8 generally used, and multisend is a function that allows you to  
9 arrange multiple sends in a batch so that they can be processed  
10 together in a single transaction.

11 (Continued on next page)

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03T5sec2

"Kim"

1 "Q From June 2019 to May 12, 2022, Chai transactions appeared  
2 on the Terraform blockchain because you mirrored or recorded  
3 Chai transactions on the blockchain using KRT; correct? You  
4 testified earlier that Chai transactions eventually appeared on  
5 the Terraform blockchain after a bit of variation. Isn't this  
6 because Chai transactions were mirrored or recorded on the  
7 blockchain using KRT?

8 "A As I explained repeatedly, it was not just Chai  
9 transactions. Inside Chai database there is a ledger table,  
10 and "LP" is short for ledger processing, and the ledger table  
11 has a line-by-line data and these line items are transferred  
12 and put into the queue layer and alternative algorithm  
13 MultiSends are generated. This is not simple. Remember  
14 arrangement functionality. In order to optimize and digest  
15 transactions, i.e. ledger information as quickly as possible on  
16 the blockchain, a special algorithm that I designed was used to  
17 turn this information into MultiSends to transmit KRT  
18 transactions into Terra, MultiSend Terra transactions, which  
19 were then uploaded on the blockchain. As such, there were  
20 numerous steps involved so words like "mirroring" or "copying"  
21 are not appropriate. The right expression would be that KRT  
22 transactions were generated. Transactions on the blockchain.

23 "Q You programmed the LP Server to bring Chai transactions,  
24 the transactions made on Chai, into the Terraform blockchain?

25 "A Yes.

03T5sec2

"Kim"

1 "Q You programmed the LP Server, correct?

2 "A Yes.

3 "Q Using a MultiSend method to send transaction as in a batch  
4 instead of sending them one by one, does this mean that you  
5 made such an algorithm, MultiSend transactions?

6 "A Yes.

7 "Q Then, when a transaction occurs on Chai pay and settlement  
8 is made, is settlement made using the blockchain? For example,  
9 when people do this with cash or money in a bank account, you  
10 send the information -- you said the information gets extracted  
11 and that would be extracted to a blockchain transaction and be  
12 uploaded after a bit of variation. The most essential thing  
13 here is the transaction being treated as paid and payment being  
14 made. But the LP Server was not involved in payment; was it?

15 "A It is true that it is linked, but as far as I know  
16 merchants receive payments in Korean Won, in my view, because I  
17 was not asked to develop technology. It is true that I did  
18 design the system in a way that it would have been possible.

19 "Q So the question is, when it comes to a merchant, i.e., the  
20 merchant who receives payment in the end for selling its  
21 product, the settlement was made regardless of the blockchain  
22 from the merchant's perspective; correct?

23 "A No. They are linked together.

24 "Q They're linked meaning?

25 "A In the same process just like payment, cancellation, and

03T5sec2

"Kim"

1 others like top-up, subscription, and so on. The whole process  
2 is linked the LP Server across the board.

3 "Q Weren't all merchants settled in Korean Won?

4 "A In Korean Won. It is true. It is true, but...

5 "Q Did they receive a converted amount?

6 "A Yes, I think so. I'm not a person in charge of that but I  
7 think so, yes.

8 "Q When you designed the program, was there no merchant that  
9 selected coins that go into a transaction wallet as their  
10 preference and received payments in coins?

11 "A At that time it was possible to make that function but the  
12 work, in terms of timing, was deprioritized. I was told that  
13 there is no need to develop it now so I did not develop it.

14 "Q So you did not proceed to that point even though it was  
15 possible to develop the function?

16 "A No, I did not.

17 "Q A wallet is needed for the LP Server to generate Chai  
18 transaction data on the blockchain; correct?

19 "A Yes, that is correct.

20 "Q Who controlled the wallet? Who had those wallets?

21 "A They were in the LP Server program database. Who  
22 controlled -- who controlled -- oh, I had access to them.

23 "Q You had access to the wallets and did anyone else have  
24 access?

25 "A I had access to the LP Server so I knew that the data of

03T5sec2

"Kim"

1 such wallets were stored in the LP Server, but I did not exert  
2 control over them as in examining them one by one or trying to  
3 manipulate them in any way. That should never be done because  
4 then --

5 "Q That is not what he meant by controlled. Did you have  
6 access which would allow you to manage the wallet data?

7 "A Yes.

8 "Q In terms of having access, you had access to the LP Server  
9 and the wallets. And who else?

10 "A All I did was keep a passcode or access-related information  
11 somewhere in case I died or something. But as far as I know,  
12 there was nobody who actually accessed it, only I did.

13 "Q Does it mean that you always had access to the LP Server  
14 despite the change in your affiliation?

15 "A Yes.

16 "Q So the concept of the wallets is that you need a wallet in  
17 relation to blockchain and cryptocurrency; correct?

18 "A Yes, that is correct.

19 "Q Only you had access to the wallets and you continued to  
20 have access to the wallets even after you left Chai Corporation  
21 and you transferred to Terraform Labs. Didn't Chai Corporation  
22 have any wallets at all? Can you say that it did not have any  
23 wallets or access to the wallets?

24 "A I think I would have naturally given Daniel Shin or Do Kwon  
25 the access if they had asked for it. None of them had.

03T5sec2

"Kim"

1 "Q Then were Daniel Shin and Do Kwon aware that you were the  
2 only one who had access to the wallets?

3 "A Yes.

4 "Q Even after you changed your affiliation to Terraform, the  
5 access was still in your possession. This would be a fair  
6 description?

7 "A Yes. I had it as an engineer.

8 "Q You explained earlier that KRT is a crypto token that is  
9 pegged to the Korean Won; a crypto token that is connected to  
10 the Korean Won?

11 "A Yes.

12 "Q You said that once the transaction takes place at Chai, a  
13 KRT transaction is generated in the end. KRT is a crypto  
14 token. Where was it coming from? Did someone provide it?  
15 With regards to the LP Server, the crypto token should have  
16 come in for the KRT transaction to be made and work somehow;  
17 right? Who provided it? Where did it come from?

18 "A I received it from Chang-Joon Han from the finance team, by  
19 asking for it.

20 "Q Chang-Joon Han was at Earth Electronic Payment which later  
21 changed its name to Chai Corporation, and his role at Earth  
22 Electronic Payment was a CFO based on my understanding; is this  
23 correct?

24 "A Yes, yes, yes. I think I asked him for it when he was the  
25 CFO of Chai Corporation.

03T5sec2

"Kim"

1 "Q You mean you asked Chang-Joon Han, the CFO of Chai  
2 Corporation, for the KRT, and he gave it to you?

3 "A Yes. I got confused going back and forth in time. I will  
4 try to stay focused while giving you answers.

5 "Q You received the KRT from Chang-Joon Han and generated KRT  
6 transactions using the LP Server; correct?

7 "A Yes.

8 "Q Does that mean the KRT eventually came from Chai  
9 Corporation?

10 "A Yes, finance. Yes.

11 "Q You received it from the CFO of Chai Pay Corporation, not  
12 Terraform, so you received the KRT from Chai Corporation. Is  
13 this a fair way of understanding? I am asking you item A of  
14 no. 55, where did KRT come from? Were it from Terraform or  
15 Chai? Please give a precise answer.

16 "A I really do not know where it came from. I made a request  
17 to Chang-Joon Han and received the KRT in the wallet, the LP  
18 wallet. This is all I know.

19 "Q No. 58. Was Chai making payments to merchants only in  
20 Korean Won?

21 "A Yes, in Korean Won. I'm not a person in charge of that  
22 matter but merchants were paid in Korean Won, based on my  
23 knowledge.

24 "Q There was no case where Chai merchants were paid in  
25 blockchain because that was just not made and settlement was

03T5sec2

"Kim"

1 only done in Korean Won; correct?

2 "A Technology-wise that was possible, but as far as I know,  
3 merchants were paid in Korean Won. I think they were paid in  
4 such a way.

5 "Q No. 62. You said earlier that there were no merchants that  
6 accepted payment in Terraform assets like KRT; correct?

7 "A Yes. About what?

8 "Q You said earlier that there were no merchant that was paid  
9 in Terraform assets, cryptocurrencies.

10 "A You mean, about Chai.

11 "Q Is it correct that there was none with regard to Chai Pay?

12 "A Yes. I think so.

13 "Q Please briefly explain the top-up program. How does it  
14 work?

15 "A Yes. When a user opens the Chai app, they are supposed to  
16 select a top-up method, and one of the top-up options they have  
17 is Terra. When they choose Terra as their top-up method, Terra  
18 station, a wallet app in their mobile phone opens, and there  
19 Chai requests for the top-up with the KRT in the wallet. The  
20 user receives a pop-up message asking if they approve, and when  
21 the user selects "yes", that is how the Terra station wallet,  
22 as a top-up method, becomes connected with the Chai server.

23 After that, when the user tries to buy something, for example,  
24 a product at a merchant, the merchant selects the payment  
25 method as Chai and the user opens the Chai app, the app opens,

03T5sec2

"Kim"

1 and the payment approval gets processed there. If the user  
2 does not have enough Chai points, meaning the Chai points they  
3 have fall below the due amount, a transaction is generated to  
4 transfer the KRT from the user's wallet for the purpose of  
5 top-up. When the transaction succeeds, Chai points get topped  
6 up and are used for the payment.

7 "Q Are there people that you communicated or discussed with  
8 about, say, the existence of the LP Server and the making of  
9 the LP Server or the detailed operations of the LP Server?

10 "A Do Kwon talked to me about the specs for linking Chai  
11 mobile payment service to the Terra blockchain. When it comes  
12 to writing code, configuring architecture, setting up  
13 components like making queue layers on both sides, etc., I did  
14 it all by myself.

15 "Q Then, for question no. 65, about the people who knew or  
16 were aware of the LP Server, is it fair to say that it was only  
17 one person, just Do Kwon, who knew the detail content? Would  
18 this be your answer?

19 "A Do you mean about the LP Server itself? Who knew about the  
20 link with Terra? Everyone knew that. And about the existence  
21 of the LP Server, well, answers may vary depending on the  
22 scope. First off, the name of the LP Server. It could be that  
23 Do Kwon did not know the name because I made that name. I  
24 think there were some people who knew that something like that  
25 was running somewhere, like Hyunjoong Alex Kim, having some

03T5sec2

"Kim"

knowledge about this, about its existence, but when it comes to how it operated, no one understood no matter how hard I tried to explain, so there was no one I had such conversations with.

"Q Despite having over 1 million users and 142 merchants, there were time periods where there were no transactions. How come?

"A I think you are saying that there are 26 days, or around that number of days, where Terra transactions did not occur. The reasons why, and the process of how such situations came to be could vary widely and some of them I remember clearly. Some others less so, but let me just share with you what is clear.

In the Terra blockchain there were names of the main net ranging from Columbus 2 to Columbus 5. When the name subsequently changed from 2 to 3, to 4, and to 5, the blockchain temporarily stopped operating and took some time to reoperate. When going from Columbus 2 to 3, the blockchain's implementation approach changed a bit so the existing Terra user wallets, the wallets linked to the users, somehow had to be modified -- I mean cleaned, which took a very long time. So, it was between Columbus 2 and 3 that reoperation -- I mean, the blockchain was actually up and running but it took a long time to sort out, tidy up the content. Later, as for 3, 4, and 5, similar context came into play causing Terra Chai payment ledger data not to be delivered to the Terra blockchain in real-time, I think, context-wise.

03T5sec2

"Kim"

1 "Q Did transactions occur during these time periods?

2 "A Chai transactions? Yes. Yes. Chai transactions occurred  
3 as long as the LP module worked.

4 "Q And the data of those transactions were later transferred  
5 to Terraform?

6 "A Yes. Yes. Correct.

7 "Q How were the transactions that occurred during those time  
8 periods sent to Terraform later?

9 "A Among what I said earlier, there is the LPQ on the Chai  
10 said which plays the WAL function. That gets stored there  
11 first and the LP Server receives such data as long as the  
12 LP Server is in operation. I mean, the blockchain may have  
13 stopped operating but does not mean that the LP Server stopped  
14 operating. So the LP Server received such data in real-time  
15 and there is this queue layer inside the LP Server which  
16 ensures that the data is stored and not lost when the  
17 blockchain faces problems and the data gets stored there. And  
18 then, when the blockchain reoperates, the process resumes, the  
19 data gets converted to multi-send, and gets uploaded.

20 "Q There was a process to do such system processing?

21 "A Yes, yes; from that point of view.

22 "Q No. 1. William Chen, he was mentioned in the direct  
23 examination earlier. Was he involved in the operation of  
24 Chai's payment application? For example, in terms of  
25 engineering or coding? William Chen?

03T5sec2

"Kim"

1 "A Chai's?

2 "Q Involved in its operation.

3 "A He was not involved with Chai at all.

4 "Q Did William Chen and Aaron Myung work on matters related to  
5 the LP Server?

6 "A I do not know who Aaron Myung is and William Chen was not  
7 involved at all.

8 "Q No. 5. Chai Pay business launched in the first half of  
9 2019 while the two entities, Chai and Terraform Labs, split up,  
10 so to speak, in the first half of 2020; correct?

11 "A Yes, correct.

12 "Q Are you familiar with Project Santa? Have you heard of it?

13 "A Yes, I have.

14 "Q Please briefly explain it, Project Santa.

15 "A Based on my recollection, Project Santa was a project where  
16 Terra delegators -- I mean Luna delegators, in fact -- the Luna  
17 delegators in the Terra network, the people who delegated their  
18 Luna tokens to validators received some Luna, I think it was  
19 Luna, via something like AirDrop.

20 "Q So it was sort of a project to offer incentives to Luna  
21 holders to participate as validators at an earlier stage -- at  
22 an early stage of the Terra project. Is this understanding  
23 correct?

24 "A Yes, yes, yes. I think so.

25 "Q So Project Santa is unrelated to the generation of Chai

03T5sec2

"Kim"

1 transactions, i.e., transactions that occur on the Chai app?

2 "A Yes. Completely. That is --

3 "Q Separate, correct?

4 "A Yes.

5 MR. LANDSMAN: Mr. Aquino, can you please pull up  
6 Exhibit A which is D-1215?

7 MR. LANDSMAN: (Reading)

8 "Q This is an e-mail retrieved from Terraform. Have you seen  
9 this e-mail?

10 "A Yes. Yes, yes. I have seen it.

11 "Q When you were working for Chai and Terraform Labs, did you  
12 sometimes receive e-mails like this one?

13 "A Yes. I received e-mails of this kind.

14 "Q If you look at the subject line it says:

15 Chai-finance/API-server.

16 What does this mean?

17 "A Chai-finance in the front is like a handle in GitHub, a  
18 service where you manage the source so it refers to the name of  
19 the organization, in a way, and the following "api-server"  
20 means the api-server project of Chai-finance.

21 "Q This kind of e-mail -- you should know this well because  
22 you are an engineer -- is sent to you and other people when  
23 there is a commit or pull request or a comment or a change  
24 related to the code in the storage, the storage like the  
25 api-server; correct?

03T5sec2

"Kim"

1 "A Yes, correct.

2 "Q What is shown here, what is shown in this e-mail contains  
3 an accurate explanation of a comment or change or a commit that  
4 is made to Chai source code. Can we view it this way?

5 "A Yes.

6 "Q This is an e-mail sent and received among the relevant  
7 people at the time so it naturally contains an accurate  
8 account; correct?

9 "A Yes.

10 "Q Was the code for the LP Server that was used in connection  
11 with Chai's payment business published and managed on GitHub?

12 "A Yes. Correct.

13 "Q There was a storage called LP-server in Terra GitHub. Did  
14 you know this?

15 "A Yes.

16 "Q The LP Server?

17 "A Yes, yes; there was the LP Server.

18 "Q Is that storage where the code and updates for the  
19 LP Server were stored? LP Server?

20 "A Yes, correct.

21 "Q The source code in the LP-server storage in Terra GitHub  
22 which I mentioned just now is what is used to operate the  
23 LP Server; correct?

24 "A Yes. Correct.

25 "Q And these e-mails that you see now, these e-mails also seem

03T5sec2

"Kim"

1 to discuss proposal to change of function in the source code.

2 Is this correct?

3 "A Yes; correct, but this one is not about the LP Server  
4 storage but the api-server.

5 "Q At the top of this e-mail there is a part written in blue  
6 highlighted in yellow now. The part in blue at the top reads:  
7 Src/lib/payment/confirm.ts, and on the bottom there is  
8 something similar in blue which reads:

9 Src/user/registration.ts. For both parts the content that  
10 comes afterwards is above the updates related to the API code  
11 and the Chai payment app; correct?

12 "A Yes. Correct.

13 "Q Looking at this e-mail now you naturally know this?

14 "A Yes. Yes.

15 "Q If you look at this part you know this well because you are  
16 an engineer. If you look at this part highlighted in yellow it  
17 reads: Lp.claimDON. What does this mean? Please explain it  
18 in layman's terms so that the general listeners can understand  
19 the lp.claimDON.

20 "A I think it would be better to start explaining from the  
21 top.

22 If you look at the first line there is a function  
23 defined as processConfirm. It says function, so it is a  
24 function. When this processConfirm function is called -- by  
25 the way not all content pertinent to this function is in the

03T5sec2

"Kim"

bottom part, but the content above is excluded. And in the bottom part there is lp.claimDON. "LP" here means the LP module in the api-server that I mentioned earlier. This, again, calls a function defined as claimDON in the LP module so consecutive calling of the functions happens. When the claimDON function is called, the following items such as payment.user.id, merchant.id and billing amount, go into the LPQ layer, the one that he said plays the role of WAL.

"Q When Chai app's API executes this lp.claimDON function, the inputs necessary for the user's transaction such as amount, from, and to, are put into the end point on the LP Server side; is this correct?

"A Yes. Correct. They go into the queue for standby.

"Q Such input process happens on the Chai application; correct? At least up to this point?

"A Yes. Correct.

"Q Therefore, when the user makes a payment or conducts a transaction, or does the top-up which you mentioned using the Chai app, Chai app's API sends over the data needed to conduct a blockchain transaction in the equivalent amount to the end point on the LP Server side?

"A Yes. Correct.

"Q What has been explained so far is only a rough overview but this process kicks in every time transactions occur on the Chai app, this kind of process; is this correct?

03T5sec2

"Kim"

1 "A Yes.

2 "Q Without such input from the Chai app the LP Server is  
3 unable to execute a blockchain transaction that is equivalent  
4 to the transaction on the Chai app; correct?

5 "A Yes.

6 "Q Such data like you said earlier?

7 "A Yes. It was unable to do so.

8 "Q That is what you said continuously in the direct  
9 examination; correct?

10 "A Yes. Correct.

11 "Q When a customer uses the Chai app to purchase from a  
12 merchant, the customer uses the Chai app. In a normal  
13 condition, the LP Server executes a corresponding blockchain  
14 transaction within a few seconds; right? In a normal condition  
15 without any failure?

16 "A Yes. Yes, correct.

17 "Q According to the code related to the blue  
18 src/lib/payment/confirm.ts part, Chai API had a function to put  
19 the Chai app payment on hold without granting approval until  
20 the data for the blockchain transaction is equivalent to the  
21 Chai app payment were put into the queue layer of the  
22 LP Server; correct?

23 "A Yes, correct.

24 "Q That is what you tried to explain earlier as shown in away  
25 lp.claimDON on the bottom; right?

03T5sec2

"Kim"

1 "A Yes. Yes.

2 "Q This function was put in place to ensure that when a  
3 transaction is made on the Chai app, a corresponding blockchain  
4 transaction goes into the queue layer of the LP Server without  
5 fail; correct?

6 "A Yes.

7 "Q This is what you explained earlier, correct?

8 "A Yes. It is the same.

9 "Q To sum up, this paragraph J, the reason where a Chai app  
10 transaction would not be approved until the corresponding  
11 blockchain transaction information is properly added to the  
12 LP Server queue was to ensure that a corresponding blockchain  
13 transaction always takes place for each Chai app transaction;  
14 correct?

15 "A Yes. Correct.

16 "Q You have given us a quick explanation so far on what you  
17 told us happens only when a Chai customer makes a transaction  
18 on the Chai app; correct? It would not just randomly happen if  
19 there were no transaction?

20 "A Yes. Correct.

21 "Q In other words, to look at the same thing from a different  
22 perspective, what is shown on Exhibit A demonstrates that the  
23 LP Server is actually used when Chai's API processes a  
24 transaction?

25 "A Yes.

03T5sec2

"Kim"

1 "Q The fact that it is used, the Chai API is Chai's process of  
2 processing its transactions on the Chai app -- let me start  
3 over.

4 All of those things are contained in Chai's API and  
5 this Chai API is an integral part of Chai's process of  
6 processing its transactions on the Chai app; correct?

7 "A Yes. They are included in the whole process.

8 "Q If you have a look at Exhibit A, underneath the writing in  
9 blue there is a part that says something like  
10 src/user/registration.ts. What is this? It seems to be about  
11 the wallet. What is this about?

12 "A This is the source code in Chai's path name, like. So this  
13 is a function that is called when a user subscribes to the Chai  
14 app.

15 "Q It is a code that is called when a new user subscribes to  
16 the Chai app you mean?

17 "A Yes.

18 "Q When there is a new Chai user, does the LP Server create a  
19 Terra wallet for that new Chai user on the blockchain?

20 "A Yes. It calls a certain LP-related module claimDON  
21 function to launch, open, launch a Terra wallet, connect to the  
22 Chai user on the blockchain.

23 "Q Is the ultimate function or the purpose of that function to  
24 create a Terra wallet for the user on the blockchain when there  
25 is a new Chai user?

03T5sec2

"Kim"

1 "A Yes.

2 "Q After the user's wallet is created, the wallet remains  
3 connected to the user's Chai account; correct?

4 "A Yes. Correct.

5 MR. LANDSMAN: For the court reporter, I'm Roger  
6 Landsman. I knew you had asked to identify ourselves.7 Mr. Aquino, if you can take down that exhibit and put  
8 up Exhibit C, which is D-1016?

9 MR. LANDSMAN: (Reading)

10 "Q Do you remember this? This is a conversation that took  
11 place on the messenger called Slack.12 "A October 9, 2020, so that was when I worked for Chai. No.  
13 Terraform Labs, Korea.14 "Q It is a conversation between you and someone called  
15 Etienne.16 "A Yes. Yes, I remember what the conversation was about, to a  
17 certain extent.18 "Q Please roughly explain what the context or background was  
19 behind this conversation, based on your recollection.

20 "A Yes.

21 Around this time I think there was a situation where  
22 the LP Server operation or KRT -- I mean the KRT transactions  
23 that correspond with Chai transactions, due to Chai, did not  
24 occur. In other words, a situation that was ascribed as down.  
25 If you look at the first line, Paul Kim is myself. LP-Watcher

03T5sec2

"Kim"

1 is a project that plays the role of in case there is an  
2 incident like this one in giving you an alert indicating that  
3 KRT transaction is not working so you should look into this.  
4 It is a project like that.

5 "Q Notifying that a problem occurred?

6 "A Yes, yes, yes. That was the background to this  
7 conversation.

8 "Q If you look at the yellow highlighted part in the middle  
9 starting with "in short" you wrote that the LP Server basically  
10 replicates Chai transactions. What did you mean by this?  
11 There were a lot of discussions on this point earlier so to  
12 sort things out, could you please explain what you meant by  
13 replicating from your point of view?

14 "A Yes. At first I tried to explain, but as Etienne is also a  
15 DevOps engineer, I wanted to quickly move to a conversation as  
16 engineers, casual explanation. There is a database term called  
17 "database replication". Etienne is a dev ops engineer so of  
18 course he has a certain level of knowledge about the database,  
19 and the purpose of database replication is to enhance the  
20 stability of certain data as well as failure response,  
21 coordination, in the face of failure and data accessibility and  
22 things like that. Storing the data in multiple databases for  
23 such purposes is described as replicating. This is the intent  
24 behind what I said there.

25 "Q From an engineer's point of view, does the word "replicate"

03T5sec2

"Kim"

1 have a different meaning from "copy" in layman's terms?

2 "A Yes. From an engineering standpoint, the word would not be  
3 understood as simple as duplicating or copying. The word would  
4 be understood to entail the purpose of enhancing stability,  
5 coordination, in the face of failure and accessibility.

6 "Q Were the blockchain transactions that were generated in  
7 accordance with the Chai transactions real transactions or were  
8 they a mere copy of the records?

9 "A They were real KRT transactions and not a mere copy.

10 "Q In that case, is it true that certain value, value was  
11 transferred between the user's wallet and the merchant's  
12 wallet, in other words, an account of some sort?

13 "A Yes. They are transfer records of KRT token stablecoins.

14 "Q Is it correct that, using blockchain technology, an  
15 accurate ledger about various information such as buy,  
16 discount, refund, reward, and merchant payment, was gained from  
17 Chai?

18 "A Yes, from Chai. From Chai.

19 "Q Thanks to, by using such blockchain technology?

20 "A Yes, yes, yes. It is correct that it was used.

21 "Q Looking at this conversation once again, Etienne goes: So  
22 basically, Chai was still working but no transactions on the  
23 blockchain so no rewards. The part that starts with: So  
24 basically Chai was still working... He says this, and your  
25 answer: Correct.

03T5sec2

"Kim"

1                   "What was your understanding of his statements that  
2 basically Chai was still working but there were no rewards  
3 because there were no transactions on the blockchain? How  
4 shall we understand this statement?

5 "A When the LP Server stops, KRT transactions are not uploaded  
6 to the blockchain. There is no problem on the Chai side but  
7 there would be no transactions because of a problem of stoppage  
8 on the side. As a result, the gas fee for the Luna stakers is  
9 not distributed. This is how you can understand the statement.

10 "Q There is no problem with Chai transactions but when the  
11 blockchain transactions are suspended, the resulting gas fee is  
12 not generated and therefore there are no rewards. Is this the  
13 correct way to understand this?

14 "A Yes, yes. There is an omitted part after "no rewards"  
15 which is "to the delegators." So no rewards to the Luna  
16 delegators.

17 "Q So according to your explanation, if the Terraform  
18 blockchain is down or the LP Server is down and not in  
19 operation during that time, the rewards, as Etienne put it, are  
20 not generated as Etienne mentioned; correct?

21 "A Yes. During that --

22 "Q During that time?

23 "A Yes. Yes.

24 "Q If you look at the line below you said: We have two queue  
25 layer in both Chai and Terra.

03T5sec2

"Kim"

1 "What does this mean?

2 "A I think I explained this earlier. Queues were made on both  
3 sides to make sure that even when failure or something happens,  
4 the content does not get lost and Terra transactions, the Terra  
5 transactions that correspond with the Chai ledger information,  
6 are generated later in case a long time elapsed. It was  
7 something that played this role.

8 "Q That means there were queue layers on both sides?

9 "A Yes.

10 "Q Then Chai's internal ledger and the transaction and  
11 settlement information on the Terraform blockchain are the  
12 same; correct? Because there are queue layers and all  
13 information gets matched?

14 "A It is true that the corresponding ledger has the same  
15 amount and other information, though the format is different.

16 "Q This is blockchain and that is not blockchain so the format  
17 is different, but the necessary information contained in the  
18 two is the same; correct?

19 "A Yes, yes. Yes.

20 "Q You used the word "mirror" here to mean that the  
21 transaction and settlement information in both Chai and Terra  
22 is identical. Is this a correct understanding of the meaning?

23 "A No. This is what Etienne said to explain how he understood  
24 it. Of course, internally, mirroring, I mean it is too  
25 difficult for me to explain this so these kinds of words, some

03T5sec2

"Kim"

1 people said "mirroring" and some people I don't know how they  
2 said it, but I think Etienne here seems to be saying this to  
3 mean that.

4 "Q Sir, are you saying you used the word "mirror" to explain  
5 the concept easily for the benefit of the other?

6 "A Yes. Between him and I, because I explained briefly, he  
7 goes, *ah, yes, OK*, and continues. Right? He wanted to check  
8 with me if his understanding was correct.

9 "Q Understood. Let me ask you this to sort things out because  
10 there was a lot of complex back and forth during the direct  
11 examination. If the Terraform blockchain went down, or the  
12 LP Server did not operate, the rewards resulting from the  
13 transactions may not have been generated during that time;  
14 correct?

15 "A Correct.

16 "Q Because during that time blockchain transactions were not  
17 generated; correct?

18 "A Yes.

19 "Q I have some questions about the MultiSend method. You  
20 explained this earlier but to get things straight I will skip  
21 no. 13 itself and start from the second paragraph. At that  
22 time recording transactions on the blockchain took a  
23 significant amount of time, in general, so from a practical  
24 standpoint there were many difficulties in applying it directly  
25 to the payment business; is this correct?

03T5sec2

"Kim"

1 "A Yes. That is correct.

2 "Q For other blockchains except Terra?

3 "A Yes.

4 "Q However, at that time Terraform developed an applied  
5 advance technologies like MultiSend to overcome such  
6 difficulties; is this correct?

7 "A Yes. Correct.

8 "Q Please briefly explain to sum up how MultiSend overcame  
9 such time limitations and why this was such advanced. In other  
10 words, tell us this is what MultiSend does.

11 "A Because KRT transactions among multiple wallets are handled  
12 together in a single transaction. Well, originally, when a  
13 transfer happens on a general blockchain, a single transaction  
14 includes a single transfer. But, when you use this MultiSend  
15 function, multiple transfer functions can be performed in one  
16 transaction.

17 "Q They are performed in a batch so speed goes up?

18 "A Yes.

19 "Q The MultiSend technology was developed and applied to  
20 replicate transaction data in real-time with an aim to not just  
21 merely copy Chai transaction data but generate and execute  
22 actual blockchain transactions corresponding to Chai  
23 transactions on the Terra blockchain? This seemed to be your  
24 intent, correct? In other words, why would we have done this  
25 in such a complicated way if we just wanted simple copying? We

03T5sec2

"Kim"

1 did it in a complicated way in order to accurately replicate  
2 the transaction data in real-time? Would that be an accurate  
3 understanding of your point?

4 "A For one thing, here the word "replication" is a database  
5 term and the actual backhand logic, as you said, the algorithms  
6 or the queues or such complicated setup were implemented to use  
7 the MultiSend method.

8 "Q So you mean all of this was not needed if you were just  
9 simply copying Chai transaction data?

10 "A Correct. If it was just simple copying, well then --

11 "Q When transaction data is replicated, so to speak, let me  
12 drop the word "mirrored" here, replicated on the blockchain,  
13 the intrinsic characteristics of blockchain arrives, i.e., the  
14 data remains on the blockchain permanently and people who  
15 participate in the blockchain can check and verify its  
16 accuracy; is this correct?

17 "A Yes. That is a general understanding.

18 "Q This is another slightly general one. The applications  
19 that are based on the blockchain, in general, not just  
20 Terraform, they sometimes use a centralized database to simply  
21 process a huge amount of transactions before executing the  
22 transaction on the blockchain; correct?

23 "A Yes. Correct. For example, precisely exchanges --  
24 exchanges also do them.

25 "Q By exchanges do you mean a securities exchange?

03T5sec2

"Kim"

1 "A No. Cryptocurrency exchange.

2 "Q Chai also used middle stage or an intermediary stage to  
3 record the transactions in fiat currency between the customers  
4 and the merchants; correct?

5 "A Yes.

6 "Q But on the other hand, Chai also had a goal which is to  
7 build a system where stablecoins can be used in transactions  
8 without customers necessarily having to know the complex  
9 process; right?

10 "A Yes, it did.

11 MR. LANDSMAN: Mr. Aquino, can you please pull up D1  
12 which is Plaintiff's Exhibit 148-A?

13 "Q Let me show you Exhibit D. D1 is an original Korean  
14 version so I think you can have a look at D1. If you look at  
15 it from the middle there is a conversation between you and Do  
16 Kwon slightly below the middle to the next page, and you can  
17 see it on the screen from the bottom part of the both. This a  
18 conversation between you and Do Kwon from December 11, 2019?

19 "A Yes, correct.

20 "Q At the lower part of the page Do Kwon asked you: After 14  
21 days, the coins automatically return to the LP Server; right?

22 Was he referring to KRT here?

23 "A Yes.

24 "Q Here, Do Kwon was referring to the KRT that moved from the  
25 merchant's wallet on the Terra network to the LP Server wallet;

03T5sec2

"Kim"

1 correct?

2 "A Yes, correct.

3 "Q And the 14 days that Do Kwon mentioned here was a typical  
4 settlement period of Chai merchants; correct?

5 "A It was a settlement cycle.

6 "Q So put them all together, was Do Kwon asking here what the  
7 LP Server did with the KRT did once the merchant received a  
8 payment? Is that what he was asking?9 "A A lot of the context is omitted here. What he wanted to  
10 know was what happens to the KRT and the merchant's  
11 corresponding Terra wallet when a merchant receives a payment  
12 after 14 days.13 "Q He was asking about what happens to the KRT in the  
14 merchant's wallet?

15 "A Yes.

16 "Q There you answered: It's not automatic, it's manual. Chai  
17 is doing it that way as of now because the LP Server  
18 specification is actually implemented identically to Chai.19 "And Do Kwon asked: Oh, then the finance team has to  
20 manually withdraw everything and move it again to the  
21 LP Server? It seems a bit tight. LOL.22 "To this question you answered: No. That's not it.  
23 You have to press the button in the admin already and the  
24 processing happens together at that time. It is just pressing  
25 a button. Haha. Each store is already doing it.

03T5sec2

"Kim"

1 "A Yes.

2 "Q Let me ask you step by step, after the merchant makes a  
3 transaction with a customer, 14 days is a settlement cycle as  
4 you said earlier. At the end of the settlement cycle, when the  
5 merchant gets paid, a Chai employee should press something like  
6 a button and Chai's internal program. Did I understand this  
7 correctly?

8 "A Yes. A responsible Chai employee on the finance team  
9 should press the button. Timing-wise, that person presses the  
10 button when they complete the settlement process.

11 "Q Pressing the button in Chai's internal management system;  
12 correct?

13 "A Yes.

14 "Q Once the payment is made to the merchant on the Chai  
15 system, accordingly, a blockchain transaction takes place where  
16 the corresponding amount of KRT in the merchant's wallet moves  
17 to the LP Server wallet; correct?

18 "A Yes.

19 "Q I would like to ask you about the top-up. Chai users were  
20 able to convert the KRT they had to Chai money points using the  
21 KRT top-up program; correct?

22 "A Yes, correct.

23 "Q In that case KRT is converted to Chai money and the Chai  
24 money is used for a transaction, so in the end it could be said  
25 that one could make a Chai transaction purchasing goods, etc.,

03T5sec2

"Kim"

1 using the KRT. Is this understanding correct?

2 "A Yes, it is.

3 "Q When you said you used the KRT top-up very much, you meant  
4 you did this; correct?

5 "A Yes, because I used it. I used it too.

6 "Q Chai must have calculated and reported the KRT amount that  
7 the customers paid to charge, i.e., top-up their Chai money;  
8 correct?

9 "A Yes, I think it did.

10 "Q When the KRT was used to top up the Chai money, naturally,  
11 a corresponding transaction would have occurred on the  
12 Terraform blockchain; was this the case?

13 "A Yes, it was.

14 "Q And Terraform Labs and Chai are the companies that are  
15 related to this work so Terraform Labs and Chai must have  
16 shared, given, and received the data resulting from such top-up  
17 transactions on a regular basis; correct?

18 "A What was going on beyond my knowledge -- since I am an  
19 engineer -- but I think I was able to expect that such work  
20 existed.

21 "Q Your testimony earlier was left a bit unorganized because  
22 of the complexity so I would like to ask you this question to  
23 clarify. Please listen: Plaintiff's argued earlier that there  
24 were five instances, between October 2021 and March 2022, when  
25 no transactions occurred on the Terraform blockchain, but it

03T5sec2

"Kim"

would not have been possible for the Chai application to have been non-functional during those periods. Please briefly explain to us, once again, how Chai transactions could still be processed even when the blockchain did not operate.

"A Many safety measures such as the queue layer and dispatcher were added so that the whole process, the whole system would work and not collapse, even during such instances.

"Q That is why it was still possible?

"A Yes. That is how.

MS. LANDOW: This is Defendant's Exhibit 9, in evidence.

MR. LANDSMAN: I don't believe that you introduced Defendant's Exhibit 9. It might be corresponding Plaintiff's Exhibit? This is Plaintiff's Exhibit 137, which is in evidence.

MS. LANDOW: This is Plaintiff's Exhibit 137 in evidence.

MS. LANDOW: (Reading)

"Q This is an article published on June 11, 2019 on Terraform's official Medium page. Have you seen this kind of material often? What is Medium?

"A I think this Medium service was used to upload news on the internet for public viewing, something like a blog.

"Q Is it correct to understand that Chai and Terraform Labs divided work in the following way? Chai provided the

03T5sec2

"Kim"

1 traditional infrastructure of a payment gateway and Terraform  
2 Labs provided the blockchain infrastructure.

3 "A Yes, correct.

4 "Q When did this division of work start, roughly, in terms of  
5 timeline.

6 "A From the beginning.

7 "Q From the beginning of the Chai Pay business?

8 "A Yes.

9 "Q I will skip the next paragraph. All the blockchain  
10 transactions corresponding to Chai transactions that were  
11 conducted on the Terra network were real transactions; correct?

12 "A Yes, they were real transactions.

13 "Q And this was briefly mentioned earlier, but blockchain  
14 wallet addresses, QR codes, personal keys, etc., were all  
15 created and managed on the back end so users did not need to  
16 manage them separately; correct?

17 "A Yes. Correct.

18 "Q In fact, customers do not need to know those things, do  
19 they?

20 "A If they knew, it would not be a mobile payment service.

21 "Q If the customers knew every single thing and managed them  
22 then it would not be called a mobile payment service?

23 "A Correct.

24 "Q Was this the same for the merchant wallets?

25 "A Yes.

03T5sec2

"Kim"

1 MS. LANDOW: We have new material, this is Defendant's  
2 Exhibit 325, in evidence.

3 MS. LANDOW: (Reading)

4 "Q This is a one-page document about Seigniorage marked F1.  
5 Please have a look. Do you remember this Seigniorage funding  
6 proposal?

7 "A Yes, I do.

8 "Q This is a proposal that was proposed, voted, and approved  
9 by the people with vetting rights on the Terra network;  
10 correct?

11 "A Yes, all delegators had voting rights.

12 "Q Delegators had voting rights and was this proposal  
13 something that was proposed, voted, and approved by them?

14 "A Yes.

15 "Q This proposal and simply was to pay back the Seigniorage  
16 that was created by the transactions on the Terra network to  
17 Chai; correct?

18 "A Yes, I remember this. It is correct.

19 "Q This is to pay back to Chai, so did Chai receive funding  
20 based on this proposal? Some sort of payback?

21 "A If you look at the timeline at the bottom, this was  
22 submitted on March 18th, and passed on April 1st, so I think  
23 the funding was given.

24 "Q Are you saying that the proposal would have been  
25 implemented accordingly?

03T5sec2

"Kim"

1 "A Yes.

2 (Continued on next page)

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03TASEC3

"Kim"

1 "Q. Then, let me ask you this way although this may sound  
2 abstract. It is said that the consumers who purchased goods  
3 using Chai were offered discounts due to the Terra blockchain.  
4 Is this accurate, or are you not familiar with this topic?

5 "A. As a person who worked on both sides, that is how I  
6 understood things worked.

7 "Q. You do not know the details, but in light of your  
8 experience working in both companies, that seemed to be the  
9 case?

10 "A. Yes.

11 "Q. One more follow-up question on the exhibit. If you look at  
12 the description part of the seigniorage proposal, it says in  
13 the parentheses 3 and 4 that the seigniorage is allocated to  
14 Chai and used as a budget for discounts, and therefore,  
15 consumers benefit from it. Are you saying that the proposal  
16 was made and executed according to this description in your  
17 view?

18 "A. Yes, I am.

19 "Q. This is the next material. This is Defendants' Exhibit 323  
20 in Korean. We have Defendants' 324, which is the certified  
21 English translation.

22 Please have a look at the following pages, too. About  
23 2 to 3 pages would be enough. Paragraph a. Do Kwon ran a kind  
24 of contest for Chai users to find the merchant wallet  
25 addresses. Are you aware of this?

03TASEC3

"Kim"

1 "A. Yes, I am aware of this event. I see October 2020.

2 "Q. How did you come to know about this?

3 "A. I heard about it from someone else that Do Kwon is doing  
4 something like that there.

5 "Q. Did you hear about this at that time?

6 "A. Yes.

7 "Q. The process was making a purchase on the Chai app, finding  
8 the purchase history on the Terra blockchain, and matching the  
9 two to identify which wallet address belonged to which  
10 merchant. Is this technically possible?

11 "A. Yes. Because, technically speaking, there is a KRT  
12 transaction that corresponds with a Chai transaction. Imagine  
13 that you paid a certain amount, say, 1,560 Korean Won at a CU  
14 convenience store or something. After that payment, if you go  
15 to the Terra blockchain and keep on searching, there should be  
16 1,560 Korean Won somewhere, right? You check if that is  
17 matching, and make another payment. This time, 1,600 Korean  
18 Won. Then, there should be 1,600 Korean Won after 1,560 Korean  
19 Won. This way, you can find out your wallet address. This is  
20 the case technically.

21 "Q. Based on your knowledge about how Chai and Terra blockchain  
22 worked, the users at the time must have been able to accurately  
23 identify the merchant, correct? If they worked hard on it?

24 "A. Yes, once you find out your wallet address, you know that  
25 this address is connected to a Chai account. After that, if

03TASEC3

"Kim"

1 you try making a payment at different merchants, let's say,  
2 first at Yanolja, and then at TMON, and then at Bungae Janger,  
3 there should be matching accounts, right? That way, you can  
4 look up which merchant wallet the KRT is transferred to. This  
5 is how you can find out.

6 "Q. When a customer makes a purchase on the Chai app, how fast  
7 does the LP server generate and conduct a transaction on the  
8 blockchain in general?

9 "A. Normally 3 seconds, and up to around 10 seconds when it is  
10 slow.

11 "Q. But, of course, the merchant does not get paid right away,  
12 correct? The merchants would not be paid in 3 or 10 seconds?

13 A. No, because there is a settlement cycle. Not right away.

14 Q. The settlement cycle is typically 14 days after the  
15 purchase. Ever since Chai opened, there were continuous  
16 transactions, so, as a result, this kind of settlement  
17 transaction amount must have happened every day between the  
18 merchants and Chai, correct?

19 "A. Yes. It must have started 14 days after launch. Yes,  
20 correct.

21 "Q. There is this thing called ChaiScan, and the transactions  
22 marketed on ChaiScan are also real transactions on the  
23 blockchain, correct?

24 "A. Yes.

25 "Q. Let me show you Plaintiff's Exhibit 152a in evidence. This

03TASEC3

"Kim"

1 seems to be a thread of Slack messages in Korean. Let me show  
2 you Plaintiff's Exhibit 152b in evidence. This is a certified  
3 English translation of Plaintiff's Exhibit 152a.

4 This is also sent by you. Please see the last page  
5 where you talk about putting money back into the merchant  
6 wallet in reverse.

7 "A. Yes, I have seen it.

8 "Q. In the conversation dated April 21, 2020, you said "it  
9 might be better to just put money back into the merchant wallet  
10 in reverse," and also said, "if the merchant's balance becomes  
11 zero, there's an issue where cancellations become impossible."  
12 Were you saying that there is an issue with a blockchain  
13 transaction not being executed if a transaction is canceled on  
14 Chai, so, taking a certain approach might be better to resolve  
15 the issue? Trying to find a solution?

16 "A. Yes, correct.

17 "Q. Could you please briefly explain the context?

18 "A. I think this conversation started probably because there  
19 was an issue of the LP server going down. So, if you look at  
20 the top, I sent a link to Yun, since Yun was a blockchain  
21 technology expert and was in charge of maintenance and repair,  
22 and we discussed how to solve the issue. The issue occurred, I  
23 said things like, 'there seems to be something strange with a  
24 wallet,' 'maybe not a user wallet,' investigating. . . and from  
25 7:48, I did some research, and I said that 'this might be a

03TASEC3

"Kim"

1 negative transaction case,' and added that 'travel agencies  
2 like Tourvis have certain days where settlements become  
3 negative.' Let me explain. The settlement cycle is 14 days,  
4 but sometimes, cancellation is made after the settlement cycle.  
5 This was during the pandemic. During the pandemic. This  
6 Tourvis that I mentioned is a travel agency, and they sell  
7 flight tickets and stuff like that, and people tend to make  
8 payments one or two months prior when they travel. Because of  
9 COVID-19, however, there was sudden mass cancellations, say,  
10 two months after the payment. As a result, the amount to be  
11 settled for Tourvis on Chai's ledger became negative. You can  
12 understand this, right? But it is not technically possible to  
13 make a negative ledger on the Terra blockchain. So we went  
14 'how should we deal with this', it is not possible to put a  
15 negative value on the blockchain, so maybe, for now, putting  
16 the KRT in the merchant wallet first and sending a recall sign  
17 afterwards might be an option. And the conversation finished  
18 with an opening saying that 'it might be better.'

19 THE COURT: Counsel, how much more do we have?

20 MR. LANDSMAN: There's about ten more pages with --  
21 five more pages with most of it that we have to read through  
22 and then some sparring interchanges, so I guess another 15  
23 minutes.

24 THE COURT: All right. We'll take our mid-morning  
25 break now then. So we'll take a 15-minute break at this time.

03TASEC3

"Kim"

1 (Continued on next page)  
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03TASEC3

"Kim"

1 (In open court; jury not present)

2 THE COURT: Those matters that I requested you send me  
3 over the weekend on the stipulation issue should be sent to my  
4 law clerk's e-mail and by no later than noon on Sunday.

5 Now, what do we have? I know we have the expert at  
6 2:00. What do we have the rest of this morning?

7 MS. MEEHAN: Your Honor, we have James Hunsaker and  
8 then another investor witness. They both need to testify today  
9 because of scheduling issues.

10 THE COURT: Well, at 2:00 we're starting the expert.

11 MS. MEEHAN: Understood, your Honor.

12 THE COURT: Keep that in mind. All right. Very good  
13 I'll see you in 15 minutes.

14 (Recess)

15 THE COURT: Couple things. First, I was here before  
16 9:00 a.m. because I had been told among other things that the  
17 lawyer and client for the privilege issue would be here and  
18 then I was told that you guys had negotiated a resolution; is  
19 that right?

20 MR. CONNOR: Your Honor, I believe that that's  
21 correct. Ms. Cuellar, who handled that issue, is not here, but  
22 I believe we resolved that issue and inquiry won't be required.

23 THE COURT: All right.

24 MR. CONNOR: Thank you.

25 THE COURT: Secondly, if you have any doubts about how

03TASEC3

"Kim"

1 long these other two witnesses are going to take, let's put  
2 them on the stand now and we can always resume the deposition  
3 of Mr. Kim later.

4 MR. PELLEGRINO: Exactly our conversation, your Honor.  
5 And if I might adjust one thing to that, before we release this  
6 witness for that purpose for now, we were wondering if you  
7 could just instruct the jury the context, something like you  
8 had authorized this deposition in Korea, it was translated from  
9 Korean into English, the questions were put in writing,  
10 something like that, because I think it may be unclear to them  
11 exactly why they're formatted the way they are.

12 THE COURT: You talking about Mr. Kim?

13 MR. PELLEGRINO: Yeah. I'm saying before I guess you  
14 would have to give the jury an instruction that he's going to  
15 come back later and finish his testimony, and oh, by the way,  
16 this is the context of how that happens.

17 THE COURT: I see. All right. Very good. Let's  
18 bring in the jury but not the -- well, do we have one of the  
19 other witnesses here?

20 MS. MEEHAN: Yes, your Honor.

21 THE COURT: All right. Why don't you get him on the  
22 stand.

23 (Continued on next page)

03TASEC3

Hunsaker - Direct

1 (In open court; jury present)

2 THE COURT: Please be seated.

3 THE DEPUTY CLERK: Take the witness stand.

4 THE COURT: Don't swear him in yet.

5 THE DEPUTY CLERK: Okay. Please remain standing.

6 THE COURT: So, ladies and gentlemen, we have two  
7 witnesses coming up who have their own scheduling issues so  
8 we're going to interrupt the Kim deposition and hear from these  
9 other witnesses, and then we'll resume the Kim deposition.

10 One thing I did want to mention about the Kim  
11 deposition that you've heard, the way it works when there is a  
12 foreign witness is that the deposition in accordance with  
13 international law really is taken by a judge, but some of the  
14 questions are ones that reflect what the SEC wanted to ask, and  
15 some of the questions are what the defendants wanted to ask,  
16 and that's why we've had two different people asking the  
17 questions, so you know that difference. But it has to be then  
18 translated into Korean. It's whole hassle. But it's done for  
19 your benefit.

20 Okay. Let's swear in the new witness.

21 JAMES HUNSAKER,

22 called as a witness by the Plaintiff,

23 having been duly sworn, testified as follows:

24 DIRECT EXAMINATION

03TASEC3

Hunsaker - Direct

1 BY MS. MEEHAN:

2 Q. Thank you, your Honor.

3 Good morning, Mr. Hunsaker.

4 A. Good morning.

5 Q. Where do you currently live?

6 A. New Jersey.

7 Q. Are you currently employed?

8 A. Yes.

9 Q. Where are you currently employed?

10 A. Monad Labs.

11 Q. What kind of a company is a Monad Labs?

12 A. It's a blockchain software company.

13 Q. What is your position there?

14 A. I'm CTO and cofounder.

15 Q. When did you found the company?

16 A. April 2022.

17 Q. What is the highest level of education that you have  
18 obtained?

19 A. Master's Degree.

20 Q. What did you get your Master's Degree in?

21 A. Computer science.

22 Q. What year did you obtain your Master's Degree?

23 A. 2005.

24 Q. And from where did you get your Master's in computer  
25 science?

03TASEC3

Hunsaker - Direct

1 A. University of Iowa.

2 Q. Just very briefly, describe your professional experience  
3 prior to founding Monad Labs?

4 A. I had a few positions after college, and then in 2010 I  
5 started in finance trading at an investment bank, and then 2014  
6 I moved to high frequency trading.

7 Q. What firm did you move to in 2014?

8 A. Jump Trading.

9 Q. What is Jump Trading?

10 A. Jump is a high-frequency trading firm. So they -- their  
11 primary vantage is speed versus other trading firms.

12 Q. Can you just explain a little bit more in layperson's terms  
13 what that means when you say their primary advantage is speed;  
14 what specifically are you referring to?

15 A. So they're able to react to changes in the market quicker  
16 than other participants are able to react, so they have a speed  
17 advantage. So, historically, that was their advantage in the  
18 market so they could make money that way basically.

19 Q. What type of assets does Jump Trading engage in trading in?

20 A. Jump trades pretty much every asset in the world: Stocks,  
21 bonds, futures, options.

22 Q. Where are Jump Trading headquarters located?

23 A. Chicago, Illinois.

24 Q. I believe you said that you joined Jump Trading in 2014; is  
25 that correct?

03TASEC3

Hunsaker - Direct

1 A. That's correct.

2 Q. What was your position when you joined?

3 A. I joined the trading team as a senior software engineer.

4 Q. What types of things did you do as a senior software  
5 engineer?

6 A. I was responsible for all the technology for our trading  
7 team so that includes like the trading model logic, the code  
8 that runs the trades on the exchanges. The alpha logic, so  
9 like when -- what is going to tell you to react, send an order  
10 or, you know, how the model is going to behave. The research  
11 infrastructure, so there's like machine learning, AI sort of  
12 stuff for building the models. So any software that's needed  
13 for like a trading team.

14 Q. And when you say you were responsible for it, what do you  
15 mean by that?

16 A. I was like the architect, so I was like designing the  
17 software, implementing the software, telling other members of  
18 the team like how to implement the software. Yeah.

19 Q. Focusing now on 2021, did there come a time when you began  
20 working for a division at Jump known as Jump Crypto?

21 A. Yes, in spring of 2021.

22 Q. What was Jump Crypto?

23 A. Jump Crypto is like an external name. Internally in Jump  
24 it was called Team Illini. Illini is like the University of  
25 Illinois basically mascot or something. It was a team that was

03TASEC3

Hunsaker - Direct

1 devoted exclusively to trading crypto and it was the only team  
2 at Jump that could trade crypto.

3 Q. When you moved over to Jump Crypto, did you move as part of  
4 a sub team?

5 A. Yeah. So when we moved in spring 2021, the HFT team that I  
6 was on, which was around eight to ten people became a sub team  
7 of Jump Crypto. So the whole team shut down our HFT trading  
8 and moved over inside Jump Crypto.

9 Q. And just to be clear, when you say HFT you are referring to  
10 high-frequency trading?

11 A. Our high-frequency trading team, correct.

12 Q. What was your role on the team?

13 A. When we moved to Jump Crypto initially, like it was a very  
14 gradual, over the span of a few months. So initially I was  
15 just trying to take our HFT software and import it so that Jump  
16 Crypto team could use that. We had a number of different  
17 projects on that team.

18 Q. What do the other members of your team do?

19 A. Our sub team is called Team Harvest and that name -- or  
20 Project Harvest. That name came from the fact that we were  
21 trying to make sure that they were fulfilling all the deals  
22 that Jump Crypto was responsible for. So we had, we had just a  
23 number of different responsibilities looking at like market  
24 making deals, whether we're fulfilling those sorts of deals.  
25 We were developing software for off-chain. One project was for

03TASEC3

Hunsaker - Direct

1 Terra. So there was just a number of different  
2 responsibilities.

3 Q. Mr. Hunsaker, if you could just keep your voice up and  
4 speak into the microphone?

5 A. Okay. Sorry.

6 Q. Thanks. You mentioned market making in your answer, what  
7 is market making?

8 A. Market making is a form of trading where you're basically  
9 buying and selling the same asset and you don't really have a  
10 view on what that -- if the price is going to move. So, you  
11 know, you basically buying from one person and selling to  
12 another constantly, and you're collecting the difference  
13 between those prices.

14 Q. How did you come to that understanding of what market  
15 making is?

16 A. I've implemented market making algorithms for Goldman Sachs  
17 and J.P. Morgan and Jump Trading.

18 Q. Getting back to your sub team within Jump Crypto, how did  
19 you communicate with the other members of your team?

20 A. There was a number of different ways. Obviously in person  
21 in the office if we're in the office together. We would have  
22 Zoom calls. So Zoom is like a video conferencing application.  
23 We had Slack, which is a like a messaging application that you  
24 can chat with other people on the team. We had e-mail  
25 obviously, but that wasn't used very frequently. We had like

03TASEC3

Hunsaker - Direct

1 Wiki, like Wikipedia sort of thing where people could like  
2 store stuff that they want to store longer term.

3 Q. You mentioned Slack, how frequently did you use the Slack?

4 A. Slack was like constant, all day every day.

5 Q. And the Zoom, how did you use Zoom at Jump Crypto?

6 A. Jump Crypto had what's called like an Always On, and the  
7 Always On is a Zoom meeting that just runs 24 hours a day,  
8 seven days a week, people will hop in and out of it but  
9 generally, everybody -- most of the team is on it while they're  
10 working.

11           And the idea of the Zoom call is that it feels like  
12 you're in the same room, so there's like a lower barrier of  
13 communication. You're more willing to like reach out and chat  
14 with somebody. So it's just like -- the team is kind of spread  
15 across the U.S. and the world, so it's just like trying to make  
16 everybody feel like they're working together.

17 Q. You mentioned that this Always On Zoom was on seven days a  
18 week?

19 A. Yes.

20 Q. And 24 hours a day?

21 A. Yes.

22 Q. How did you use the Always On Zoom?

23 A. So there was daily sort of like kickoff meetings for the  
24 team. So when I would wake up in the morning, the first thing  
25 I would do is sign on the Always On Zoom. There would be Jump

03TASEC3

Hunsaker - Direct

1 Crypto, like team wide meeting. It was I believe it was  
2 9:00 a.m. eastern time, 8:00 a.m. Chicago, and then we had a  
3 Singapore team, so that would be like their evening. And  
4 everybody would go around, give updates. There was somebody  
5 who was telling the team check in and status. People would  
6 discuss deals. Software developers would discuss maybe  
7 something they're working on, this sort of thing.

8 Q. How were you alerted to other discussions on this Always On  
9 Zoom that you have described?

10 A. Well, when I was awake or working, it was always on. I was  
11 usually connected to it listening in to what's going on. But  
12 there was also Slack, you know, people would mention in Slack  
13 that they want to discuss something, so people would hop on the  
14 Always On Zoom to discuss it.

15 Q. And you mentioned that there was a kickoff meeting in the  
16 morning. Who led that kickoff meeting?

17 A. The meeting was led by a guy named Simon Johansson, who was  
18 like kind of just like a project coordinator sort of role.

19 Q. Who else typically participated in that meeting?

20 A. Bill DiSomma who ran the team, and then, you know, just  
21 whoever was giving an update for their area, their  
22 responsibility.

23 Q. Tell me, who is Bill DiSomma?

24 A. Bill DiSomma is one of the two owners of Jump Trading.

25 Q. And how frequently did you interact with Mr. DiSomma?

03TASEC3

Hunsaker - Direct

1 A. He hired me in 2013, 2014. So I've known him since then.

2 Q. And how did you typically communicate with him?

3 A. In person. I've seen him many times in person. The Zoom  
4 calls, meetings, slack sometimes.

5 MS. MEEHAN: Mr. Haywood, if you could please pull up  
6 Plaintiff's Exhibit 65 just for the witness please.

7 Q. Mr. Hunsaker, do you recognize that?

8 A. Yes, that's Bill DiSomma.

9 MS. MEEHAN: At this time, the plaintiffs offer  
10 Plaintiff's Exhibit 659 into evidence?

11 MR. HENKIN: No objection.

12 THE COURT: Received.

13 (Plaintiff's Exhibit 659 received in evidence)

14 MS. MEEHAN: Thank you. You can take it down,  
15 Mr. Haywood.

16 BY MS. MEEHAN:

17 Q. Mr. Hunsaker, how involved was Mr. DiSomma in your day to  
18 day at Jump Crypto?

19 A. He ran that team.

20 Q. When you say "he ran the team," what types of things did he  
21 do?

22 A. He basically approved like deals, any sort of deal  
23 strategy. He directed the lead trader on what to, you know,  
24 how trading strategies -- he set strategy for the team in like  
25 what people were going to work on, strategic initiatives.

03TASEC3

Hunsaker - Direct

1 Yeah, he managed the team.

2 Q. Are you also familiar with an individual known as Kanav  
3 Kariya?

4 A. Yes.

5 Q. Who is Kanav Kariya?

6 A. He was one of the original, or he was an early member of  
7 Jump Crypto. And at some point he became president of Jump  
8 Crypto.

9 Q. During the time period that you were working within Jump  
10 Crypto, how frequently did you interact with Mr. Kariya?

11 A. I had meetings with him both in person and on Zoom.

12 MS. MEEHAN: Mr. Haywood, could you please pull up  
13 Plaintiff's Exhibit 658, just for the witness.

14 Q. Mr. Hunsaker do you recognize that picture?

15 A. Yes, that's Kanav.

16 MS. MEEHAN: At this time, the SEC offers Plaintiff's  
17 Exhibit 658 into evidence.

18 MR. HENKIN: No objection.

19 THE COURT: Received.

20 (Plaintiff's Exhibit 658 received in evidence)

21 MS. MEEHAN: Thank you, Mr. Haywood. You can take  
22 that down.

23 Q. In his role as President of Jump Crypto what types of  
24 things did Mr. Kariya do?

25 A. I observed him mostly making business -- he's like more

03TASEC3

Hunsaker - Direct

1 like a business development person, salesperson. He was making  
2 deals with projects. He was kind of the public face of Jump  
3 Crypto. So, you know, he would interface with other teams in  
4 the crypto community. Yeah. Generally that was his  
5 responsibility.

6 MS. MEEHAN: And I apologize, Mr. Haywood, I'm not  
7 sure if I displayed Plaintiff's Exhibit 659 for the jury, so if  
8 you could just please display that one for the jury so they  
9 could see it.

10 And you can take it down. And if you could also  
11 please just display Plaintiff's Exhibit 658 for the jury so  
12 they can look at it briefly. And you can take it down. Thank  
13 you.

14 BY MS. MEEHAN:

15 Q. I believe you said you moved over to Jump Crypto in  
16 approximately spring 2021?

17 A. Yes, that's correct.

18 Q. Do you recall what month that was?

19 A. No. It was a gradual transition. So it started like early  
20 year and then it took a few months for us to -- because we were  
21 still running HFT stuff, so we had to take time to shut it down  
22 and gradually move over.

23 Q. So during the time that you moved over and began working  
24 with Jump Crypto, did there come a time when you became  
25 familiar with a company known as Terraform Labs?

03TASEC3

Hunsaker - Direct

1 A. Yes.

2 Q. When did you first become familiar with Terraform Labs?

3 A. It was early when we started, it was spring of 2021.

4 Q. How did you become familiar with them?

5 A. Bill DiSomma was telling us about a project that Jump was  
6 building for Terra called Project Nebula. And he was  
7 explaining, you know, why we're doing the project and what the  
8 whole purpose of it was.

9 Q. What did he tell you about the project?

10 A. So the project is meant to create an ETF sort of  
11 functionality on blockchain. ETF is like an exchange traded  
12 fund. So, you know, people are most familiar with like index  
13 ETFs, like S&P 500, you might have like a retirement account,  
14 something like that. So Jump was building this project for the  
15 Terra blockchain. And he explained that the reason we're  
16 building it is because we want to incentivize UST adoption.  
17 And why would we want to do that? Because Jump had a deal with  
18 Terra to have increased UST adoption.

19 Q. Did you have any understanding of what that means,  
20 increased UST adoption?

21 A. That the total amount of UST, like in circulation is  
22 higher.

23 Q. Apart from this conversation with Mr. DiSomma, did you have  
24 any other basis for your familiarity with Terraform Labs?

25 A. Yeah. I mean, personally I looked at the blockchain, the

03TASEC3

Hunsaker - Direct

1 software, looked into the mechanism for the stablecoin. Just  
2 explored things, and also had discussions with other team  
3 members.

4 Q. When you say the mechanism what are you specifically  
5 referring to?

6 A. The mechanism by which the UST stablecoin is supposed to  
7 maintain its peg to a dollar.

8 Q. And what is your understanding of how that worked?

9 A. So there's two tokens on the Terra blockchain, one is UST,  
10 which is meant to be worth one U.S. dollar. And then there's  
11 another token called Luna. And basically within the software  
12 it's program that you could always exchange \$1 of UST for \$1 of  
13 Luna or vice versa, \$1 of Luna for \$1 of UST. So if UST is  
14 ever not worth a dollar, like less or more, you can -- there's  
15 an arbitrage opportunity. Arbitrage means like it's almost  
16 zero risk. You just execute some instructions, make some  
17 money.

18 So if UST deviates from a dollar, you can -- let's say  
19 like UST is less than a dollar. You can buy UST for let's say  
20 90 cents. You can convert that to \$1 of Luna and then sell  
21 that for a dollar so you've made 10 cents. You bought it for  
22 90 cents, sold it for a dollar. So that's an arbitrage  
23 opportunity. It's almost no risk. And you can do it  
24 instantaneously and that buying pressure for UST will cause the  
25 price to go up. The idea is the buying pressure will cause the

03TASEC3

Hunsaker - Direct

1 price to go up and then UST will be eventually be worth a  
2 dollar again.

3 Q. Directing attention on or about May 19th, 2021. Did there  
4 come a time when you became aware that the UST stablecoin  
5 dropped below it's \$1 peg?

6 A. Yes.

7 Q. How did you first become aware of this?

8 A. There was some -- there was just some chatter in our Slack  
9 chat application.

10 Q. Was it notable to you that UST depegged from \$1?

11 A. Yeah. I went and looked at the market data myself and saw  
12 that it was worth less than \$1 and was curious about it.

13 Q. You said you were curious about it?

14 A. Curious about it, yeah.

15 Q. Why was that?

16 A. Because it should be worth a dollar if the mechanism is  
17 working.

18 Q. Did there come a point later in time when the price of UST  
19 dropped more substantially from \$1?

20 A. Yeah, it dropped several cents a few days later, you know  
21 over the span of a few days.

22 Q. And was that amount of a drop significant to you?

23 A. Definitely because the more that the -- the more it drops,  
24 the more that arbitrage opportunity is there, so the more money  
25 you can make to restore it. And so it didn't make sense that

03TASEC3

Hunsaker - Direct

1 it would drop that much because the natural like economics  
2 should restore the price back to a dollar.

3 Q. Were there any other reasons why the drop of the UST below  
4 \$1 was significant to you at that time?

5 A. Yeah, it was an important deal for Jump. For Jump had, you  
6 know, two major deals, and Terra was one of those two major  
7 deals, so.

8 Q. On the day that this more significant drop in the price of  
9 UST happened, did you join the Zoom meeting that day?

10 A. Yes.

11 Q. What prompted you to join the meeting?

12 A. There was, again, there was chatter on -- there was some  
13 conversation on the Slack application that they were going to  
14 talk on Zoom about the price decrease in Terra and what to do  
15 about it.

16 Q. Do you recall what day of the week this was?

17 A. I think it was the weekend, but yeah, I don't recall  
18 exactly.

19 Q. This was the Always On Zoom that you joined?

20 A. The Always On Zoom, yes.

21 Q. After you joined the call, what do you recall about what  
22 happened?

23 A. Bill DiSomma was discussing with some other team members  
24 about Terra and what was going on and the status of things.

25 Q. Approximately how many people were on the call?

03TASEC3

Hunsaker - Direct

1 A. At least 10, but it was not the whole team.

2 Q. I'm sorry. I didn't hear.

3 A. At least 10, but it was not the whole team.

4 Q. And did you join with your video on?

5 A. No. I -- the Always On, usually people had their -- they  
6 definitely usually had their microphones muted, and usually  
7 they had their video off.

8 Q. Did Mr. DiSomma have his video on?

9 A. I don't believe so.

10 Q. How could you identify that it was Mr. DiSomma speaking?

11 A. So Zoom, you know, has a box for each person and if their  
12 video is on, then obviously the video is there. But if it's  
13 not, it's just the person's name and then when someone is  
14 speaking it highlights the box and so it shows who's speaking  
15 at that moment. But I also know his voice, so. . .

16 Q. Did there come a time at some point when Mr. Kariya joined  
17 the same Always On Zoom?

18 A. Yeah, at some point in the meeting a few minutes later  
19 Kanav joined the call.

20 Q. Tell me what happened after Kanav Kariya joined the call?

21 A. He joined the call and very quickly said to Bill, I spoke  
22 to Do, he's going to vest us.

23 Q. And how did you identify that it was Mr. Kariya speaking?

24 A. Same thing, I know his voice and also the square with his  
25 shape was highlighted.

03TASEC3

Hunsaker - Direct

1 Q. Had you ever heard that "word" vest before?

2 A. Yes. Vest just means like conditions by which the deal is  
3 fulfilled. So you know --

4 Q. And -- sorry.

5 A. Yeah. So if you like if you have a deal with somebody,  
6 then there's like conditions by which if you fulfill those  
7 conditions, then you'll get the payment. So that's the vesting  
8 conditions and so that's what he meant.

9 Q. So when Mr. Kariya said I spoke to Do and they're going to  
10 vest us, based on your experience, what did you understand that  
11 to mean?

12 A. That the previous vesting conditions no longer applied, and  
13 if Jump helped with the depeg, that the deal would be  
14 fulfilled.

15 MR. HENKIN: Objection. Move to strike. Lack of  
16 foundation.

17 THE COURT: Overruled.

18 BY MS. MEEHAN:

19 Q. After Mr. Kanav made this statement on the Zoom call, what  
20 happened next?

21 A. Bill started directing actions to basically start trading  
22 UST, and so he was giving instructions to the traders and kind  
23 of like what the plan was and that sort of thing.

24 Q. How did he give those instructions?

25 A. At that time he gave them over Zoom and then the Zoom call

03TASEC3

Hunsaker - Direct

1 ended and over the next few days he gave them over Zoom and  
2 Slack.

3 Q. But you were not a trader yourself, correct?

4 A. Correct.

5 Q. So how did you know that this was going on?

6 A. I have access to all the -- I had access to all the Slack  
7 channels, so I could see -- so channels is like different  
8 conversations, and there can be different people on different  
9 channels. So even though I wasn't a trader, I was in the  
10 trading channel so I could see what the traders were talking.  
11 I could see like the automated notifications they got from the  
12 models. So even though I wasn't a trader, I could see  
13 everything that was happening.

14 Q. And what types of instructions was Mr. DiSomma giving to  
15 the traders?

16 A. He was telling them how to adjust the models so that they  
17 could trade differently.

18 Q. Can you provide a little more detail about that? What do  
19 you mean when you say he was telling them to adjust the models?

20 A. So the models have parameters, and the parameters are like  
21 how the model behaves. The Jump Crypto models were pretty  
22 simple market making models.

23 So a parameter might be like how much do you want --  
24 how big of orders do you want to send, or how closely those  
25 orders should be like to the market, these sorts of things. So

03TASEC3

Hunsaker - Direct

1 he would tell them adjust the parameters, and the model would  
2 then send bigger orders or move the orders around in price,  
3 that sort of thing.

4 So when he's telling them adjust the parameters,  
5 they're basically going to the GUI, they change the parameter,  
6 and the software changes like what the market -- what the Jump  
7 market making models were doing.

8 Q. What were these orders for?

9 A. For buying UST, buying and selling UST.

10 Q. And you mentioned a "GUI," what were you referring to when  
11 you said GUI?

12 A. There's a trading GUI that traders use. It shows, you  
13 know, like the different models. It shows like what their  
14 position is. Position is like how much UST they own. It  
15 shows -- it can show them order books, so like what does it  
16 look like on the exchange and where are the models orders on  
17 the exchange. So it can -- it just basically shows all the  
18 information you need to like manage a trading operation.

19 Q. Did you personally look at the trading GUI at that time?

20 A. Yes. I had access to the trading GUI, and I also looked at  
21 that.

22 Q. What did you observe when you looked at the trading GUI?

23 A. It just seemed like the models were more aggressive. They  
24 were not behaving in typical sort of like market making style,  
25 which is to basically, you know, not really take a position and

03TASEC3

Hunsaker - Direct

1 just behave in a way where you're just trying to make money off  
2 the spread, rather than like the movement of the asset.

3 Q. I'm sorry, did you say it was not consistent with that?

4 A. It was not consistent with typical market making, what you  
5 would see.

6 Q. In what way was it not consistent?

7 A. It was just more aggressive, and the orders were more  
8 bigger, the trading was more aggressive. It was accumulating  
9 positions.

10 Q. What type of position was it accumulating?

11 A. It was UST. It was buying UST.

12 Q. Did there come a time later when the -- when the UST's peg  
13 was eventually restored to \$1?

14 A. Yeah, a few days later. It took a couple days for it to be  
15 pushed back up.

16 Q. After that peg was restored, did Mr. DiSomma give any  
17 further instruction to the traders with regard to UST?

18 A. Yeah. At that point, Jump had accumulated a large position  
19 of UST. And so some of the traders were instructed basically  
20 to sell it, because he didn't want to own that much UST. But  
21 he was saying sell it very carefully not to cause like another  
22 depeg event. Because if Jump just started dumping the UST on  
23 the market, it would also cause the price of UST to drop again,  
24 so he didn't want to that happen.

25 Q. And during these few days when you were making these

03TASEC3

Hunsaker - Direct

1 observations about Jump's trading and what Mr. DiSomma was  
2 directing, did you hear anything else about the amount of money  
3 that Jump was willing to spend with respect to UST?

4 A. Yeah. On one of those morning meetings during those days,  
5 Bill was, like he often did, gave sort of philosophical  
6 statements about Jump Crypto, trading, that sort of thing --

7 MR. HENKIN: Objection. Hearsay.

8 MS. MEEHAN: Your Honor. It's statement against  
9 interest, and it's also admissible under 8033, in furtherance  
10 of conspiracy.

11 THE COURT: Yeah. The objection is overruled.

12 A. So, yeah, he was saying that -- because, number one, Terra  
13 was a big important project to Jump. He was willing to risk up  
14 to a couple hundred million dollars to do this, and also as an  
15 add-on, it was important for Jump to show that like they're,  
16 you know, a strong partner, and that they're, you know,  
17 important in the crypto community, so. . .

18 Q. Mr. Hunsaker, after these events occurred in May 2021, did  
19 there come a time later when you learned more about the  
20 business relationship between Terraform and Jump Trading?

21 A. Yeah. I learned more details about what the actual deal  
22 was.

23 Q. Let me stop you there. And how did you learn that?

24 A. I saw -- so Jump had a deal tracking system. The deal  
25 tracking system was a website that showed all the deals that

03TASEC3

Hunsaker - Direct

1 Jump had made. Terra was just one of many, many deals. And,  
2 you know, I saw on that website that basically --

3 Q. Let me just ask you a few questions about that deal  
4 tracking system.

5 Based on your experience, was it Jump's practice to  
6 keep information in its systems in the regular course of its  
7 activities?

8 A. Yes.

9 Q. And maintaining this information, did Jump maintain this  
10 information in its systems in the regular course of its  
11 activities?

12 A. Yes.

13 Q. And maintaining this information, was the information  
14 entered at or around the times that these deals were executed?

15 A. Yes.

16 Q. So what did you learn when you looked at the deal tracking  
17 system with respect to Terraform and Jump Trading?

18 A. Yeah. So the deal tracking system, like I said, was like a  
19 website. It had -- it was kind of like a spreadsheet almost.  
20 So columns like who the deals with, the terms of the deal, you  
21 know, the different columns. And so there was a row for Terra  
22 and it was like Terra -- Jump is receiving approximately  
23 1 million Luna a month and, you know, that they had vested and  
24 then it had columns about like what Jump was going to do with,  
25 you know, the different tokens they were receiving from

03TASEC3

Hunsaker - Direct

1 different projects.

2 Q. Did there come a time when you left Jump Trading?

3 A. Yes.

4 Q. When was that?

5 A. February of 2022.

6 Q. And around that time did there come a time when you  
7 personally purchased UST?

8 A. Yes. I purchased UST either January or February of 2022  
9 through April of 2022.

10 Q. What did you do with the UST that you purchased?

11 A. So Terra had this protocol called Anchor. Anchor was -- is  
12 basically a lending and borrowing protocol, and it was paying  
13 approximately 20 percent interest. And so I deposited -- I  
14 purchased UST for the purpose of putting it in Anchor and  
15 earning 20 percent interest.

16 Q. How much did you invest in the Anchor protocol?

17 A. In total -- I invested over those several months, so it  
18 wasn't all at once. But I think the total accumulated position  
19 was about \$200,000.

20 Q. And in light of what you knew about Jump's trading during  
21 these May 2021 events, did you have any concerns about the  
22 stability mechanism of UST?

23 A. Yeah. I didn't -- didn't believe that it would work.

24 Q. So why did you choose to invest in the Anchor protocol?

25 A. It was paying 20 percent interest. And that funding was

03TASEC3

Hunsaker - Direct

1 basically from VC money, so it was kind of, you know, an easy  
2 way to earn 20 percent. But I also knew that like, with my  
3 experience in watching the UST, that I could get out of it if I  
4 needed to quickly.

5 Q. And when you say get out of it quickly, did you mean that  
6 you would be able to withdraw your funds?

7 A. Yes, correct.

8 Q. And for how long a period of time did you keep your UST  
9 assets deposited in the Anchor protocol?

10 A. Kept it through first week of May.

11 Q. And when did you withdraw?

12 A. I believe it was around May 8th.

13 Q. And why did you withdraw?

14 A. The -- over those months, the economics started even  
15 looking worse and worse. And just watching closely, somebody  
16 had forwarded me like a Twitter post that the economics were  
17 getting worse, and I looked at it and said I'm going to be  
18 conservative about this and take my money out, and it had  
19 started to depeg a little bit.

20 Q. Did you lose any money on your investment?

21 A. I think in aggregate I had made money, but I did give back  
22 some of my earnings because I sold UST at less than a dollar.

23 Q. Did there come a time when you filed a complaint with the  
24 SEC regarding these events in May 2021 that we've just  
25 discussed?

03TASEC3

Hunsaker - Direct

1 A. Yes.

2 Q. When was that?

3 A. Mid August of 2022.

4 Q. What led you to file that complaint?

5 A. When I saw the, you know, the impact to like all the  
6 victims in May 2022 depeg, I tried to like basically, you know,  
7 try to ensure that there was some sort of justice or  
8 restitution could happen for the people who lost their money.  
9 And I tried to -- tried to post this information like  
10 anonymously online. I created like a temporary Reddit account.  
11 And tried to post it. The Reddit rejected that because it was  
12 a new account. So, you know, I gave it to somebody who was on  
13 Twitter and they were posting some of that information. But I  
14 didn't feel like that that was really getting traction or that  
15 the government or people would actually respond to Twitter  
16 posts. So that's when I decided to -- shortly thereafter, I  
17 decided to -- I had to some way to get it to the government  
18 basically.

19 Q. Are you aware of any potential benefit from your contacting  
20 the SEC in this case?

21 A. Yeah, there's a whistleblower program so there's a reward  
22 for whistleblower.

23 Q. Was that part of the reason that you filed your complaint?

24 A. No. I didn't -- didn't have any expectation. I was just  
25 trying to do the right thing.

03TASEC3

Hunsaker - Cross

1 Q. Have you been promised anything by the SEC for your  
2 participation as a witness in this trial?

3 A. No.

4 Q. You said that you filed your complaint with the SEC in  
5 August 2022; is that right?

6 A. Correct.

7 Q. At any point prior to filing your complaint with the SEC,  
8 did you ever raise any concerns about these events with anyone  
9 else at Jump?

10 A. No.

11 Q. Why not?

12 A. There were times when I was in Jump Crypto where I had  
13 raised, not even concerns, but just questions about, you know,  
14 some of the projects we were doing, and Bill got upset at me so  
15 I just didn't feel like it would be, you know, good for my  
16 career while I was still at Jump Crypto to raise these  
17 concerns.

18 MS. MEEHAN: No further questions.

19 THE COURT: Cross-examination.

20 CROSS-EXAMINATION

21 BY MR. HENKIN:

22 Q. Good afternoon, Mr. Hunsaker. My name is Douglas Henkin.  
23 I represent Terraform Labs.

24 I assume you remember me from our deposition, taking  
25 your deposition?

03TASEC3

Hunsaker - Cross

1 A. Yes.

2 Q. And is that the only time that we've met?

3 A. Yes.

4 Q. During your direct testimony you were talking about the  
5 mint burn mechanism; do you recall that testimony?

6 A. Yes.

7 Q. Now, that mint burn mechanism only works if people are  
8 willing to engage with it; is that right?

9 A. Yes.

10 Q. Now, you, at the very end of your testimony, were talking  
11 about investing or purchasing UST and depositing it into  
12 Anchor; that's correct?

13 A. Correct.

14 Q. And you withdrew it on May 7, 2022; is that correct?

15 A. I don't remember the exact date.

16 Q. Do you have any reason to disagree with me?

17 A. I would say May 7th or May 8th.

18 Q. Okay. And when you withdrew it, you withdrew \$207,000; is  
19 that correct?

20 A. I don't know the exact number, but approximately, yes.

21 Q. Okay. And during the time that you had your UST deposited  
22 with Anchor, you received all the interest that you were  
23 expecting to earn from having deposited with Anchor, correct?

24 A. I would guess so, yes.

25 Q. Do you have any reason to think that you didn't?

O3TASEC3

Hunsaker - Cross

1 A. I never -- I didn't double check the math.

2 Q. And when you -- strike that.

3 You mentioned losing -- that you thought you didn't  
4 get all the money that you could have in your direct. Isn't it  
5 true that the only money that you think you lost was due to bad  
6 trading that you did from UST back to USDC?

7 A. What do you mean by bad trading?

8 Q. Did you ever state in a Twitter direct message: I didn't  
9 lose any money less than one-month interest, but that was my  
10 bad trading from UST to USDC?

11 A. I was probably referring to that I didn't sell it quickly  
12 enough.

13 Q. Now, all the things that you were discussing about Jump's  
14 activities during the May 2021 depeg, that all happened in  
15 May 2021, right?

16 A. Yes.

17 Q. And the additional information that you claim that you  
18 learned, you claim you learned that in the -- around the same  
19 time period, right?

20 A. What additional information are you referring to?

21 Q. About the supposed deals, the deal tracking system that you  
22 were --

23 A. That would have been during that summer, later.

24 Q. Okay. And you didn't say anything to the SEC at that  
25 point, correct?

03TASEC3

Hunsaker - Cross

1 A. Correct.

2 Q. Or, in fact, at any time during 2021, right?

3 A. Correct.

4 Q. And you never raised any internal questions about what you  
5 claimed to have learned while you were at Jump; is that  
6 correct?

7 A. About the -- about the restoring the depeg?

8 Q. Yes. About anything relating to Terra.

9 A. I mean, I raised questions about the Nebula Project, but  
10 that's separate.

11 Q. Right. So and when you say the Nebula Project, what you  
12 mean is you asked questions about how to implement and do the  
13 work that was relating to Project Nebula; is that right?

14 A. No. As I described there was one example where Bill got  
15 upset at me and that was when I questioned like whether the  
16 Nebula Project was really like a viable project.

17 Q. And when you say that Bill got upset at you, was that a  
18 situation where it was a group meeting?

19 A. That was a group meeting, and then subsequently after the  
20 group meeting he was complaining.

21 Q. But with respect -- other than with respect to the Nebula  
22 Project, did you raise any concerns internally within Jump  
23 regarding the May 2021 depeg or any other alleged deal with --  
24 between Terraform and Jump?

25 A. No.

O3TASEC3

Hunsaker - Cross

1 Q. And you talked about a little bit about Monad and starting  
2 it after you left Jump; do you recall that?

3 A. Yes.

4 Q. You're the chief technology officer; is that right?

5 A. Correct.

6 Q. And the CEO of Monad is Keone Hon; is that right?

7 A. That's correct.

8 Q. And Mr. Hon is somebody that you worked with at Jump, isn't  
9 he?

10 A. Yeah, we worked together since February 2014 on the same  
11 HFT team.

12 Q. And he's one of your cofounders of the Monad, right?

13 A. Yes, we left Jump together to form Monad.

14 Q. And I think you said in your direct that you formed Monad  
15 in April, 2022?

16 A. That's correct.

17 Q. Okay. And you didn't even decide to contact the SEC about  
18 this matter until after May 2022, correct?

19 A. That's correct.

20 Q. Now, building a start-up like Monad requires money, doesn't  
21 it?

22 A. Yes.

23 Q. And you needed -- and you solicited investors for funds to  
24 start up and operate Monad, didn't you?

25 A. That's correct.

O3TASEC3

Hunsaker - Cross

1 Q. And, in fact, Monad solicited funds from investors, started  
2 soliciting funds right after being founded, right?

3 A. Yes.

4 Q. And am I correct that Monad raised about \$19 million from  
5 investors in its initial round in 2022?

6 A. That's correct.

7 Q. So 9 million in May 2022, and 10 million later in the year?

8 A. I don't remember the exact amounts and dates but -- it was  
9 19 million by the end of 2022 I believe.

10 Q. Okay. And you're still raising funds today; isn't that  
11 right?

12 MS. MEEHAN: Objection. Relevance.

13 MR. HENKIN: Your Honor, this goes to credibility.

14 THE COURT: I'll let it go a couple more questions.  
15 I'm not seeing the relevance yet, but I'll let you give it a  
16 shot.

17 MR. HENKIN: I actually think I only have one more  
18 question on it.

19 THE COURT: Okay. Go ahead.

20 MR. HENKIN: After this one.

21 Q. You're still raising funds as we speak, correct?

22 A. We just completed a fundraise.

23 Q. And the fundraise that you just completed would value Monad  
24 at \$3 billion; is that right?

25 A. That's correct.

1 O3TASEC3

Hunsaker - Cross

2 Q. And is it correct that you don't have any documents or  
3 recordings to prove anything that you complained to the SEC  
about in your whistleblower report?

4 A. I didn't take any documentation or recordings from Jump.

5 Q. Isn't it true that you wrote in a Twitter direct message  
6 that you don't have any documents or recordings to prove  
anything?

7 A. Probably true.

8 (Continued on next page)

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03T5sec4

Hunsaker - Cross

1 BY MR. HENKIN:

2 Q. When you filed your whistle-blower complaint, did you tell  
3 the SEC -- well, let's go back to your UST approaches. That  
4 was substantially all of your liquid assets at the time; wasn't  
5 it?

6 A. I don't recall. It was money from a bonus from Jump that I  
7 had temporarily, yes. I don't recall.

8 Q. Do you recall writing in a Twitter direct message: I had  
9 most of my liquid assets in Anchor.

10 A. I might have. I don't recall that.

11 Q. Let's see if we can refresh your recollection.

12 MR. HENKIN: Can you bring up, just for the witness,  
13 D-1624 at page 12?

14 THE COURT: I want to instruct the witness and also  
15 caution counsel, because we have had, with various witnesses on  
16 both sides, a misuse of this procedure. The question for any  
17 witness on refreshing recollection is whether a document -- and  
18 they can be shown any document -- sparks an independent  
19 recollection in their own mind of such and such a factor, not  
20 simply that a document not in evidence is then read, in effect,  
21 into evidence, which would never be proper.

22 So, after you have looked at this document, the  
23 question is, having looked at it, do you have an independent  
24 recollection that you sent that message? If you did.

25 THE WITNESS: I don't understand. What do you mean

03T5sec4

Hunsaker - Cross

1 independent recollection?

2 THE COURT: So put the document off the screen.

3 Now, in your mind right now, if I were to ask you --

4 What is the date of the message?

5 MR. HENKIN: It is May -- one second -- May 23, 2022.

6 THE COURT: Do you now, having looked at that  
7 document, have an actual memory of what you said in that  
8 document?

9 THE WITNESS: I -- vaguely. I mean I might have said  
10 that.

11 THE COURT: OK.

12 BY MR. HENKIN:

13 Q. Do you have any reason to doubt that is what you said?

14 THE COURT: Sustained.

15 Q. At the time you filed your whistle-blower complaint, did  
16 you tell the SEC you started Monad labs and were raising money?

17 A. I don't recall.

18 Q. At the time that you -- strike that.

19 Do you recall discussing, in Twitter direct messages  
20 on May 24, 2022, having spoken with the lawyer who became your  
21 whistle-blower counsel?

22 MS. MEEHAN: Objection, your Honor; best evidence.

23 MR. HENKIN: I am asking about his recollection.

24 THE COURT: I am sorry. Let me look at the question.  
25 So, the problem I have with the question is it is a little

03T5sec4

Hunsaker - Cross

1 vague, but --

2 MR. HENKIN: I can clarify it if you want, your Honor.

3 THE COURT: Go ahead.

4 Q. Mr. Hunsaker, do you recall sending a Twitter message, a  
5 Twitter direct message on May 24, 2022, describing a  
6 conversation with a lawyer who you were then consulting with in  
7 which you --

8 THE COURT: No, no. Stop.

9 Q. Let me stop there. Do you recall that?

10 A. Maybe.

11 THE COURT: Well, what do you mean by maybe?

12 THE WITNESS: Well, I definitely discussed that I had  
13 spoken with a lawyer in the message.14 THE COURT: So regardless of the date, around that  
15 time you recollect sending a Twitter message referring to a  
16 discussion you had had with your lawyer?

17 THE WITNESS: Yes.

18 THE COURT: Go ahead, counsel.

19 BY MR. HENKIN:

20 Q. Do you recall that one of the things that you said was: I  
21 think two things. He is not sure it is illegal --

22 MS. MEEHAN: Objection, your Honor.

23 THE COURT: Yes. Sustained.

24 Q. Do you have any recollection of the specifics of your --

25 THE COURT: No, no, no. It calls for hearsay.

03T5sec4

Hunsaker - Cross

1 Sustained.

2 MR. HENKIN: No, it is not hearsay, your Honor,  
3 because it is what Mr. Hunsaker was saying.

4 THE COURT: No, but it is only being offered, if I  
5 understand the offer, for the truth of what the lawyer said.

6 MR. HENKIN: No. It is being offered for the fact  
7 that Mr. Hunsaker said it.

8 THE COURT: No.

9 MR. HENKIN: I will move on, your Honor.

10 THE COURT: Very good.

11 BY MR. HENKIN:

12 Q. Mr. Hunsaker, you were talking, during your direct  
13 testimony, about certain documents that you say you later  
14 learned of after the May 2021 depeg. Do you recall that?

15 MS. MEEHAN: Objection. Vague.

16 THE COURT: No, I will allow it.

17 Q. Do you recall that?

18 A. What do you mean by documents?

19 Q. You were talking specifically about what you called the  
20 deal tracker interface?

21 A. Deal tracking system.

22 Q. Deal tracking system. Do you recall that?

23 A. Yes.

24 Q. Prior to May 2021, I think you agree that you learned that  
25 Terraform and Jump had a business relationship; is that

03T5sec4

Hunsaker - Cross

1 correct?

2 A. Yes.

3 Q. And you called it a market-making relationship; is that  
4 right?

5 A. No. I didn't call it that.

6 Q. What was your understanding of the relationship when you  
7 first started moving over to Jump crypto?

8 A. That they had a deal to increase the adoption of UST.

9 Q. And was part of that deal Project Nebula as well?

10 Developing Project Nebula?

11 A. Project Nebula was a possible project that would achieve  
12 that, help achieve that goal.13 Q. And you, yourself, never saw any documents relating to any  
14 business transactions or any deals between Terraform and Jump;  
15 is that correct?16 A. Outside of what you had shown me and the SEC had shown me,  
17 no.18 Q. And when you say outside of what I had shown you, what do  
19 you mean?

20 A. During my deposition you showed me documents.

21 Q. OK, so let me rephrase the question.

22 During the time that you were at Jump, you never saw  
23 any documents relating to any business deals between Terraform  
24 and Jump?

25 A. I didn't see any contractual documents, no.

03T5sec4

Hunsaker - Cross

1 Q. And I think you testified during direct that Jump  
2 considered its relationship with Terraform important from the  
3 perspective of Jump's business?

4 A. Not exactly. It was an important deal.

5 Q. So let me ask the question again. Did Jump consider its  
6 relationship with Terraform an important relationship from the  
7 perspective of Jump's business?

8 MS. MEEHAN: Objection. Speculation.

9 THE COURT: Speculation; also effectively asked and  
10 answered. Sustained.

11 Q. Now, in your direct testimony you asserted that you heard  
12 from Mr. DiSomma that Jump's reputation as a reliable partner  
13 was essential to securing future deals in the crypto industry;  
14 is that right?

15 MS. MEEHAN: Objection. Misstates the testimony.

16 Q. Is that something that you say you heard from Mr. DiSomma?

17 THE COURT: If it is not accurate just correct it,  
18 but --

19 MR. HENKIN: No.

20 THE COURT: -- but say whatever it is that is in that  
21 ballpark, so to speak.

22 THE WITNESS: Sorry. Can you repeat the question?

23 BY MR. HENKIN:

24 Q. Would you agree with me that Mr. DiSomma discussed, over  
25 Zoom, how much money he was willing for Jump to put at risk to

03T5sec4

Hunsaker - Cross

1 help restore UST's \$1 peg? To the best of your recollection,  
2 DiSomma said that he was willing for Jump to risk about  
3 \$200 million to help restore the peg because Jump's reputation,  
4 as a reliable partner, was essential to securing future deals  
5 in the crypto industry.

6 THE COURT: What is your question?

7 Q. Would you agree with that? Is that what you have stated in  
8 this case?

9 A. Yeah, that was one reason for him to risk that money.

10 Q. And during your direct testimony -- strike that.

11 For Jump's relationship with Terraform to be relevant  
12 to its reputation as a reliable partner, that relationship  
13 would have to be public; wouldn't it?

14 MS. MEEHAN: Objection.

15 THE COURT: Overruled.

16 A. No.

17 Q. During your day-to-day work at Jump Crypto, you didn't  
18 interact with any employees at Terraform, did you?

19 A. I might have had a couple meetings with them relating to  
20 the Nebula Project but I don't recall them specifically.

21 Q. Did you have any day-to-day interactions with anyone from  
22 Terraform?

23 A. On a daily basis? No.

24 Q. You did you ever speak directly with anybody from  
25 Terraform? When I say directly I just mean you,

03T5sec4

Hunsaker - Cross

1 person-to-person.

2 A. Later.

3 Q. Later when?

4 A. When one of the Project Nebula team members left and he  
5 joined Terraform and I spoke to him.

6 Q. But other than that, did you ever speak, person-to-person,  
7 with anybody at TFL?

8 A. No.

9 Q. Did you ever speak directly or person to person with  
10 Mr. Kwon?

11 A. No. There was a Q & A session but I didn't speak to him  
12 directly.

13 Q. So that was just a group meeting?

14 A. Group meeting, correct.

15 Q. And you were listening?

16 A. Yes.

17 Q. And just going back to the question, the Q & A we had a few  
18 minutes ago about contractual documents, the ones that you  
19 referenced being shown by the SEC and at your deposition; you  
20 have no idea who drafted any of those documents, do you?

21 A. No.

22 Q. And you never discussed any of those documents with anyone  
23 at Jump; did you?

24 A. No.

25 Q. Now, you talked about the deal tracking system. You don't

03T5sec4

Hunsaker - Cross

1 know for sure that you saw anything about a deal between Jump  
2 and TFL and Terraform on the deal tracking system, do you?

3 MS. MEEHAN: Objection; vague.

4 THE COURT: Sustained.

5 Q. You don't know the last time that you looked at the deal  
6 tracking system at Jump, do you?

7 A. 2021.

8 Q. And you have no personal knowledge of how information gets  
9 entered into the deal tracking system, do you?

10 A. No. I presume that the PD team enters it.

11 Q. I don't know what you want to presume, I want to know what  
12 you know.

13 A. I have never seen anybody type into the deal tracking  
14 system.

15 Q. And the deal tracking system wasn't a secret within Jump,  
16 was it?

17 A. I don't understand the question by secret.

18 Q. In other words, anybody from Jump Crypto could access it.

19 A. I don't know that.

20 Q. Did anybody ever tell you not to look at it?

21 A. No.

22 Q. As far as you know, did anybody at Jump Crypto ever tell  
23 anybody else at Jump Crypto not to look at it?

24 A. No.

25 Q. For that matter, did anybody at Jump or Jump Crypto ever

03T5sec4

Hunsaker - Cross

1 tell you not to look at any document?

2 A. No.

3 Q. And you don't have any records from the deal tracking  
4 system; is that correct?

5 A. It would be improper for me to take Jump records when I  
6 left Jump.

7 Q. You talked during your direct testimony about vesting. Am  
8 I correct that you would agree with me that the word that you  
9 used was your understanding but you don't have any personal  
10 knowledge about what actually happened with respect to what you  
11 called vesting?

12 A. I don't understand that question.

13 Q. Do you have any personal knowledge about how any deals  
14 between Terraform and Jump worked?

15 A. As I said, the vesting requirement, as explained to me  
16 originally, was a UST adoption.

17 Q. Now, you testified about certain trading that occurred  
18 during the May 2021 depeg. You were never a trader at Jump;  
19 right?

20 A. Correct.

21 Q. And none of the systems that you testified seeing, like the  
22 graphical user interface, for example, were systems that you  
23 operated; is that right?

24 A. I would develop those type of systems so I didn't operate  
25 them.

03T5sec4

Hunsaker - Cross

1 Q. Meaning you didn't operate them on a day-to-day trade basis  
2 to actually do trades?

3 A. The Jump Crypto-specific ones? I never operated them but  
4 as part of the HFT team, yes, I would do that.

5 Q. But at Jump Crypto, no?

6 A. Correct.

7 Q. And it is correct that you don't know what the book stacker  
8 is; right?

9 A. I recognize the name.

10 Q. But you don't know what it is?

11 A. Yes, it is a trading system, as far as my recollection.

12 Q. But other than that you don't know anything about it?

13 A. It's layering the book on the -- placing orders, layering  
14 the book on the exchange, so that's where the name comes from.

15 Q. And it is correct that you never reviewed any records of  
16 Jump's actual trading of UST in May 2021; correct?

17 A. No. I did see the trading notifications from the engines  
18 and Slack.

19 Q. Ah. I didn't say trading notifications, I said trading  
20 records?

21 A. I don't know what you mean by records then.

22 Q. So did you review what trades had actually been made by  
23 Jump Crypto in UST after those trades were made?

24 A. Historically? They were showing up in the Slack, that's  
25 where they would be notified.

03T5sec4

Hunsaker - Cross

1 Q. But did you review trading records to look at what Jump's  
2 positions were, for example, on May 24, 2021?

3 A. No.

4 Q. And you understand that prior to the restoration of the  
5 peg, Jump was market-making for UST; is that correct?

6 A. That's my understanding.

7 Q. Now, the traders who --

8 THE COURT: Counsel, how much more do you have?

9 MR. HENKIN: Probably about 15 minutes.

10 THE COURT: OK. Go ahead.

11 MR. CHESLEY: Your Honor, apologies. Andrew Chesley  
12 for Do Kwon. We have about two questions for Mr. Hunsaker.

13 THE COURT: All right.

14 BY MR. HENKIN:

15 Q. Josh Suiter was one of the traders who participated in  
16 actual UST trading; is that right?

17 A. He was the team leader of the traders.

18 Q. And Chris Drew was also on that team?

19 A. Sorry?

20 Q. Chris Drew was also on that team?

21 A. I don't recognize that name.

22 Q. You don't recognize the name Chris Drew?

23 A. No.

24 Q. And Mr. Han was also on that trading team; right?

25 A. No. Mr. Han was on my team.

03T5sec4

Hunsaker - Cross

1 Q. So you are saying that there was a separate team that was  
2 the UST team and that your team was not involved in trading  
3 UST?

4 A. No. There was no team involved specific with UST. Some  
5 members of Team Harvest, which was the team I was on, also did  
6 some UST trading.

7 Q. OK. And have you told Mr. Han about your whistle-blower  
8 report?

9 MS. MEEHAN: Objection; relevance.

10 THE COURT: Sustained.

11 Q. In your whistle-blower report is -- let me ask a different  
12 question.

13 Was any of the trading that you reported in your  
14 whistle-blower report done by Mr. Han?

15 MS. MEEHAN: Objection; lacks foundation.

16 THE COURT: Sustained.

17 Q. Was any of the trading that you reported in your  
18 whistle-blower report done by someone who is a current employee  
19 of Monad?

20 MS. MEEHAN: Objection.

21 THE COURT: Sustained.

22 MS. MEEHAN: Relevance.

23 THE COURT: Sustained. I am sustaining the last one  
24 not on the grounds of relevance, necessarily, but on the  
25 grounds of lack of foundation. If you wanted to lay a

03T5sec4

Hunsaker - Cross

1 foundation you might be able to ask that question.

2 BY MR. HENKIN:

3 Q. Did you discuss with Mr. Han that you had filed a  
4 whistle-blower complaint?

5 MS. MEEHAN: Objection; relevance.

6 MR. HENKIN: This is part of laying the foundation,  
7 your Honor.

8 MS. MEEHAN: The Court already sustained this  
9 objection.

10 THE COURT: No, I think that's -- so I will allow that  
11 question.

12 A. He found out on his own after your law firm published my  
13 name.

14 Q. Why did you not tell him?

15 THE COURT: Sustained.

16 Q. Was the reason that you did not tell Mr. Han yourself about  
17 your whistle-blower complaint that some of the trading that you  
18 reported in it was done by Mr. Han?

19 MS. MEEHAN: Objection.

20 THE COURT: Sustained.

21 Q. Is it correct that -- so you talked about hearing a  
22 conversation, hearing people say on the always-on Zoom that  
23 Terraform had vested Jump; is that correct?

24 A. No. I said Kanav said that he spoke to Do and he is going  
25 to vest us.

03T5sec4

Hunsaker - Cross

1 Q. And that's the only basis that you have for your testimony;  
2 is that correct?

3 MS. MEEHAN: Objection; vague.

4 Q. You have not seen any documents that say it, all you know  
5 is that you heard Kanav say it?

6 MS. MEEHAN: Objection; vague.

7 THE COURT: I will allow it.

8 A. Well, the payments started so I was aware of the payments.

9 Q. When you say the payments started, what do you mean?

10 A. While I was still at Jump we were receiving the 1 million  
11 Luna a month.

12 Q. Wasn't Jump receiving a million Luna a month prior to that?

13 A. I'm not aware.

14 Q. So you don't know whether the million Luna that you saw was  
15 just a continuation of something that had started previously?

16 A. It was new to me and it was discussed new to me.

17 Q. So you don't know, one way or another, whether the million  
18 Luna that you saw coming in each month -- that you say you saw  
19 coming in each month after May 2021, had also been coming in  
20 monthly prior to May 2021?

21 MS. MEEHAN: Objection; asked and answered.

22 THE COURT: Sustained.

23 Q. You had no one-on-one conversations with Mr. Kariya about  
24 the May 2021 depeg; isn't that right?

25 A. That's correct.

03T5sec4

Hunsaker - Cross

1 Q. And you had no one-on-one conversations with Mr. DiSomma  
2 about the May 2021 depeg; is that right?

3 A. That's correct.

4 Q. And you don't recall what time of day what you think you  
5 heard on the always-on Zoom occurred; is that right?

6 A. I don't recall specifically, no.

7 Q. And I think you said during your direct that there were  
8 eight to 10 people on the call at that time?

9 A. That's not what I said.

10 Q. How many people were on the call at that time?

11 A. I said there were at least 10.

12 Q. At least 10.

13 Do you remember who else was on the call?

14 A. No, I don't.

15 Q. And you don't recall Mr. Kariya, during that part of the  
16 call, saying anything about Jump's trading; do you?

17 A. That's correct.

18 Q. And in fact you don't recall if Mr. Kariya or Mr. DiSomma  
19 said anything about trading during that part of the call; do  
20 you?

21 A. Bill started describing actions for trading.

22 Q. But not prior to that?

23 A. Not prior to what?

24 Q. Not prior to what you say is the vesting comment.

25 A. Correct.

03T5sec4

Hunsaker - Cross

1 Q. And you don't -- strike that.

2 A. Sorry. I don't recall whether he said something about  
3 trading in general.

4 Q. And during the always-on Zoom, do you recall there being  
5 statements made about Jump being a good partner with Terraform?

6 A. Under what circumstance?

7 Q. I'm asking if you recall.

8 A. Around that time?

9 Q. Yes, around that time.

10 A. I think I already said that that was one of the reasons  
11 that Bill was willing to risk money.

12 Q. You have no firsthand knowledge about whether Mr. Kwon ever  
13 reached out to Jump for help during the May 2021 depeg; do you?

14 A. I was never on a call with Do Kwon.

15 Q. And you never heard anyone say that the vesting was in  
16 exchange for anything; did you?

17 A. It was implied.

18 Q. But you never heard anyone say it; did you?

19 A. No. I told you what he said.

20 Q. And that was your inference from what he said?

21 A. Yes.

22 Q. And the vesting would have modified -- strike that.

23 There are no notes or recordings of any of the  
24 conversations that we have been talking about, are there?

25 A. I don't have any notes.

03T5sec4

Hunsaker - Cross

1 Q. In fact, you never took any notes of any conversations that  
2 you had at Jump Trading or Jump Crypto; isn't that right?

3 A. Like I said in my deposition, if I took notes I would  
4 e-mail them to myself so this would be on the Jump e-mail  
5 server somewhere.

6 Q. And you don't recall -- strike that.

7 So you are relying entirely on your memory for  
8 everything that you testified to?

9 A. Generally, yes; and public market data for dates.

10 Q. And when you say "public market data" you are just talking  
11 about UST prices; right?

12 A. Exactly.

13 Q. You solicited Jump to invest in Monad, didn't you?

14 A. No.

15 Q. You didn't?

16 A. No. There was a conversation between Keone and Bill, but I  
17 was not part of the conversation.

18 Q. So Mr. Han solicited Jump to invest in Monad?

19 A. I don't believe that is an accurate description of what  
20 happened.

21 Q. Did Monad speak to Jump -- so, did Monad speak to Jump  
22 about potentially investing in Monad?

23 A. My understanding of the conversation is that Bill offered,  
24 and once Keone said that we were going to leave to start Monad  
25 that Bill offered to invest. And there was some, like,

03T5sec4

Hunsaker - Cross

1 preliminary sort of discussions and they had a preliminary,  
2 like, agreement.

3 Q. And did that ever happen?

4 A. No. They decided that Jump was not a good crypto VC and so  
5 we went back to them to modify the agreement.

6 Q. You just said you decided that Jump was not a good crypto  
7 VC. Isn't it true that Jump stopped doing VC investing?

8 MS. MEEHAN: Objection. Mischaracterized the  
9 testimony.

10 THE COURT: It does. It definitely mischaracterizes.

11 MR. HENKIN: No, no.

12 THE COURT: It is not what he said. Put another  
13 question, counsel.

14 Q. Is the reason that Jump did not invest in Monad that Jump,  
15 itself, stopped doing VC investing?

16 A. No. That's not true.

17 Q. What are you saying happened?

18 A. I just told you. We decided that they weren't a good VC,  
19 it wasn't their specially, Jump was a trading firm and there is  
20 other VCs that have more capability such as offering expertise  
21 with hiring, marketing, all that sort of stuff. Jump didn't  
22 have that. So we went back to Jump and asked for a new deal  
23 and we couldn't come to terms.

24 MR. HENKIN: Give me one minute, your Honor?

25 THE COURT: Yes.

03T5sec4

Hunsaker - Cross

1 (Counsel conferring)

2 MR. HENKIN: Thank you, Mr. Hunsaker.

3 THE COURT: Go ahead.

4 CROSS-EXAMINATION

5 BY MR. CHESLEY:

6 Q. Good afternoon, Mr. Hunsaker. My name is Andrew Chesley.

7 I am the attorney for Do Kwon. I just have a couple of

8 questions for you.

9 A. OK.

10 Q. At the end of your direct examination you said that you  
11 didn't report your concerns about the May 2021 depeg at Jump  
12 because at other times you had raised concerns about Jump  
13 projects to Mr. DiSomma and he had gotten angry with you.

14 Do you recall that testimony?

15 A. Yes.

16 Q. Can you tell us about those other Jump projects that you  
17 raised concerns about?

18 A. Well, the example that I remember the most objection was  
19 Project Nebula.

20 Q. Do you recall any other examples?

21 A. No. I would have to think. Off the top of my head, no,  
22 but there were a couple times that Bill DiSomma and I kind of  
23 butted heads on what strategy or this sort of thing.

24 Q. But you don't recall specific examples besides Project  
25 Nebula?

03T5sec4

1 A. Not as I sit here right now, no.

2 Q. What were your concerns about Project Nebula?

3 A. It was a de-centralized ETF protocol and it didn't make  
4 economic sense to me. I felt like a centralized thing like  
5 people would trust binance to do the same sort of  
6 functionality, binance as a crypto change, to do the same sort  
7 of functionality, and so, like, the de-centralized nature of  
8 this didn't really make sense to me.

9 Q. But it is fair to say that your concerns about Project  
10 Nebula were not related to what you testified about today about  
11 the May 2021 depeg?

12 A. My concerns about Project Nebula were just about the  
13 project itself.

14 Q. So that's a yes, it was not related to your concerns  
15 about --

16 A. Not related to depeg.

17 MR. CHESLEY: Thank you, Mr. Hunsaker.

18 THE COURT: Redirect?

19 MS. MEEHAN: No redirect, your Honor.

20 THE COURT: Thank you very much. You may step down.

21 THE WITNESS: Thank you.

22 (Witness excused)

23 THE COURT: Please call your next witness. Or,  
24 actually, come to the side bar.

25 (Continued next page)

03T5sec4

1 (At side bar)

2 THE COURT: Now, I feel badly burned because I had  
3 requested, and the SEC was kind enough to respond favorably to  
4 my request, that we have the expert testify beginning at 2:00  
5 today so that my students at NYU could observe that. The SEC  
6 had flagged, in the pretrial consent order, there were two  
7 witnesses who had to appear today, and although I don't know  
8 the reason for that, I had assumed that if they reasonably felt  
9 they were going to take more than a few minutes we would have,  
10 this morning, put off the rest of the Paul Kim deposition until  
11 we had heard from those two witnesses. But that's not what  
12 happened.

13 Now, who is the other witness?

14 MS. CUELLAR: Sir, his name is Nader George, your  
15 Honor, and I can promise you I have gotten his direct down to  
16 15 to 20 minutes and I understand the cross is not very long.

17 MR. CHESLEY: Roughly the same length or short.

18 MS. CUELLAR: And I will cut even more if I can.

19 THE COURT: We will not take him at 2:00, we will take  
20 him after the expert.

21 MS. CUELLAR: Understood, your Honor. Thank you, your  
22 Honor.

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03T5sec4

1 (In open court)

2 THE COURT: All right, ladies and gentlemen. Counsel  
3 have talked me into giving you a full hour and 12 minutes for  
4 lunch, so we will give you your lunch now but we do want to  
5 start promptly at 2:00. You are always prompt but, anyway, so  
6 be back a few minutes before 2:00 and we will start then.

7 (Continued on next page)

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03T5sec4

1 (Jury not present)

2 THE COURT: Be seated.

3 A couple of follow-up questions from side bar. How  
4 long is the SEC expected to be on direct with the expert?

5 MR. CARNEY: Your Honor, I would expect two hours but  
6 I'm hoping --

7 THE COURT: Two hours on direct?

8 MR. CARNEY: On direct, but I'm hoping I can cut it  
9 down to less than that. I just didn't want to underestimate.

10 THE COURT: Well, let me ask one other question. What  
11 is the reason the other witness can't come any other day but  
12 today?

13 MS. CUELLAR: Your Honor, he lives in Southern  
14 California. He is a pharmacist. He works at an independent  
15 pharmacy and if he is not back for Monday, he will have to  
16 close. He tried to get somebody else to cover but they will be  
17 working at another pharmacy so no matter what, the one of the  
18 pharmacies must close. He came on a red-eye last night because  
19 this is his only day off.

20 THE COURT: We certainly want to take him late today  
21 so he can net a nap before that.

22 Well, I reiterate that I feel badly burned by how this  
23 was all handled by counsel but it sounds like we will do the  
24 direct of the expert but we won't get to his cross, and then we  
25 will take the other witness right after the direct of the

03TASEC5

1 expert, and if you can cut it down from less than two hours,  
2 that is fine, but it sounds like the other witness will only  
3 take a half hour so it should all work out.

4 Now, we will want to give the jury a brief break, I  
5 will try to keep it to 10 minutes, around 3:00 or so, 3:00,  
6 3:15. Very good. We will see you at 2:00.

7 (Continued on next page)

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03TASEC5

1                   Afternoon session.

2                   2:00 p.m.

3                   (In open court; jury not present)

4                   THE COURT: Before we bring in the expert witness, let  
5 me just mention to counsel, it used to be the practice that  
6 after you had given the expert's credentials, you would say to  
7 the Court "we move to qualify him as an expert on X, Y, and Z."  
8 The Second Circuit has disapproved that, in my view correctly  
9 disapproved it. That really suggests that the Court is somehow  
10 backing the expertise of the witness. So don't do that and we  
11 won't have any problem.

12                  Okay. Let's bring in the next witness.

13                  MR. CALIFANO: Your Honor, one thing we just wanted to  
14 motion. As you recall there was a motion *in limine* to limit  
15 certain questioning by the defense about whether or not  
16 Dr. Edman had examined very specific components, actual  
17 components, and I wanted to just describe it because we have  
18 reached an agreement so the Court understands what we're doing.

19                  THE COURT: Okay.

20                  MR. CALIFANO: So the understanding is that  
21 Dr. Edman --

22                  THE COURT: You've reached an agreement? Oh, my God.  
23 Wait a minute, I better call my cardiologist. Go ahead.

24                  MR. CALIFANO: The agreement is this, your Honor:  
25 Dr. Edman, as part of his examination, has examined the source

03TASEC5

1 code for the LP server. Defense counsel will not cross-examine  
2 him on his failure to examine the actual LP server. However,  
3 and this is different, defense counsel is entitled without  
4 opening the door to examine him on the fact that he did not  
5 examine the source code for the Chai system or the source code  
6 for -- excuse me. Or the Chai system itself, or the  
7 transaction data from the Chai system.

8 THE COURT: Which would have been available you're  
9 saying?

10 MR. CALIFANO: Well, whether it would have been  
11 available or not, your Honor, both parties attempted to get  
12 that from Chai Corporation and were not successful. So that's  
13 just a fact that that limitation is one that is not in dispute  
14 because we both tried and failed. I will still away from his  
15 failure to examine the actual LP server.

16 THE COURT: The LP server, we've been through that and  
17 I'm delighted you resolved that. But I don't want any  
18 suggestion, given what you just told me, that he somehow failed  
19 to get something that was available when you're telling me it  
20 wasn't available.

21 MR. CALIFANO: I think, your Honor, it is important  
22 that we be able to cross-examine him on the fact that his  
23 analysis does not take into account the fact that the LP server  
24 was part of the larger Chai system.

25 THE COURT: That's fair game. All I'm saying is what

03TASEC5

1 you need to stay away from is any suggestion that -- you can  
2 say, as part of your data, you never included X. But you can't  
3 say anything that suggests and why didn't you get X.

4 MR. CALIFANO: Understood, your Honor. We're not  
5 going to do that.

6 THE COURT: Okay. Very good.

7 MR. CALIFANO: The only other thing, your Honor, I  
8 don't know if it will come up here, but I understand, your  
9 Honor, I want to make sure. There may be an occasion for a  
10 voir dire, but if the Court would prefer that that voir dire be  
11 very limited, or that it conduct voir dire, I just wanted to  
12 understand that before I raised that request.

13 THE COURT: No, you can do a voir dire. I do think  
14 that given the extensive *Daubert* hearings and all that it  
15 should be fairly limited, but if you wanted to do a voir dire  
16 you're welcome to do so.

17 MR. CARNEY: And, your Honor, since I won't be asking  
18 for the Court to qualify him, should I indicate when the  
19 appropriate time where I'm done with the background  
20 qualifications --

21 THE COURT: Just move on. Put the next question. If  
22 that's the point where they have their voir dire.

23 MR. CARNEY: He'll stand up.

24 THE COURT: He'll stand up and have it.

25 MR. CARNEY: Thank you, your Honor.

03TASEC5

1                   MR. FERRARA: Your Honor, Michael Ferrara for Do Kwon.  
2 I'm not in any way casting aspersions of the witness at all.  
3 In Dr. Edman's deposition he would at times frequently  
4 volunteer that he was -- that when he was asked about the  
5 server, he sort of volunteered, "we requested that from the  
6 defense and it was not provided." I just want to make sure  
7 that the SEC has sort of instructed him that he shouldn't  
8 volunteer that.

9                   MR. CARNEY: Dr. Edman has been advised of the  
10 compromise that I've reached with Mr. Califano.

11                  THE COURT: Okay. Very good. Let's bring in the jury  
12 and let's bring in the witness.

13                  (Continued on next page)

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03TASEC5

Edman - Direct

1 (In open court; jury present)

2 THE COURT: I couldn't see what was on the back of  
3 Juror No. 4 T-shirt. Turn around. Don't be shy. All right.  
4 There we go. Okay. Please be seated.

5 THE DEPUTY CLERK: Please remain standing.

6 MATTHEW EDMAN,

7 called as a witness by the Plaintiff,  
8 having been duly sworn, testified as follows:

9 THE COURT: Counsel.

10 MR. CARNEY: Thank you, your Honor. And before I  
11 begin, your Honor, I just want to let you know that we have  
12 prepared some demonstratives that have been produced to the  
13 defendants that I would ask permission to display to the jury  
14 at the appropriate times.

15 THE COURT: Yes.

16 MR. CARNEY: Thank you.

17 DIRECT EXAMINATION

18 BY MR. CARNEY:

19 Q. Good afternoon, Dr. Edman. Where are you currently  
20 employed?

21 A. I am currently a partner and cofounder of a firm called  
22 NAXO. We are a cybersecurity and blockchain investigations  
23 firm based here in New York.

24 Q. And can you please describe the nature of your client  
25 engagements at NAXO?

03TASEC5

Edman - Direct

1 A. Pretty much all of my client engagements involve blockchain  
2 analysis and investigations. I primarily work with law  
3 enforcement, legal teams, companies and individuals on disputes  
4 and investigations related to crypto assets in the context of  
5 civil or criminal litigation. I also do work with individuals  
6 and companies on matters related to lost and stolen crypto  
7 assets and support referrals to law enforcement.

8 Q. Now, Dr. Edman, did you prepare a demonstrative summarizing  
9 your background and education?

10 A. I did.

11 MR. CARNEY: And, Mr. Haywood, can you please pull up  
12 Edmond Demonstrative 1. And we can publish it to the jury.

13 Q. Dr. Edman, can you please describe your educational  
14 background?

15 A. Sure. So pretty much all of my education is in computer  
16 science. I have a bachelor of science in computer science from  
17 Baylor University, master of science in computer science from  
18 Rensselaer Polytechnic Institute and PhD also in computer  
19 science also from Rensselaer.

20 Q. So how many years of study in total were your bachelors  
21 your masters and your PhD?

22 A. It was about ten years.

23 Q. And did you have any area of focus in your graduate  
24 studies?

25 A. The focus of my graduate studies generally was security and

03TASEC5

Edman - Direct

1 applied cryptography, and specifically focused a lot on  
2 anonymous communication systems on the internet.

3 Q. And did you study blockchain technologies in connection  
4 with your graduate work?

5 A. So when I was in graduate school, a lot of that time  
6 predated modern blockchain networks like Bitcoin, but a lot of  
7 the same fundamental constructs that underlie anonymous  
8 communication systems also form the building blocks for modern  
9 blockchain networks; things like public-key cryptography,  
10 peer-to-peer networks, and mixes and mix networks.

11 Q. And those topics you just mentioned, did you publish any  
12 papers related to those topics?

13 A. I did.

14 Q. And can you just describe those?

15 A. Sure. So I published I guess several papers related to the  
16 design and analysis of anonymous communications systems in  
17 peer-reviewed conferences and journals. I also published, as  
18 part of my research qualifier, it was a survey, which is kind  
19 of like an overview or review of prominent papers in the field,  
20 which was also published in a peer-reviewed journal.

21 Q. And so after completing your PhD, where were you employed?

22 A. My first job after completing my PhD was for a federally  
23 funded research and development center called the Mitre  
24 Corporation.

25 Q. And what sort of work did you do at Mitre?

03TASEC5

Edman - Direct

1 A. So Mitre supports various aspects of the federal  
2 government. I principally supported the Federal Bureau of  
3 Investigations remote operations unit based out of Quantico,  
4 Virginia.

5 Q. And what type of work were you doing that at Quantico?

6 A. So given my background in applied cryptography and  
7 anonymous communication systems, most of my work for Mitre in  
8 support of the FBI related to supporting investigations related  
9 to darknet markets, which are sort of like hidden websites that  
10 allow individuals to buy and sell illegal -- say illegal  
11 narcotics firearms, hacking materials, various things like  
12 that.

13 Q. And that work you just described, did that relate at all to  
14 blockchain and crypto asset analysis?

15 A. It did, yeah. So most, if not all, of the darknet markets  
16 that we were investigating used crypto assets, Bitcoin  
17 primarily at the time, to facilitate buying and selling of  
18 illegal items.

19 Q. And were any of the investigations you supported while at  
20 Mitre conducted here in the Southern District of New York?

21 A. Yes. Probably one of the most notable cases that I worked  
22 on when I was supporting the FBI was an investigation into, it  
23 was a notorious darknet market called Silk Road. It  
24 facilitated billions of dollars of transactions related to  
25 primarily illegal narcotics. I worked with agents up here in

03TASEC5

Edman - Direct

1 the Southern District of New York to help identify where that  
2 site was hosted.

3 Q. And, Dr. Edman, what was your role in the Silk Road  
4 investigation?

5 MR. CALIFANO: Your Honor, objection just on relevance  
6 because -- I'll leave it there.

7 THE COURT: I do think we don't need to get into great  
8 length, but I'll allow him to answer that question, but then I  
9 think we need to move on.

10 MR. CARNEY: Thank you, your Honor.

11 THE COURT: What was your role?

12 THE WITNESS: So my work on that kind of had a couple  
13 different components. One was developing the tools and  
14 techniques that law enforcement used to find out where that  
15 site was hosted so they could seize it. And then also in  
16 connection with that case I analyzed various blockchain Bitcoin  
17 transactions associated with buyer and seller activity on the  
18 site, as well as reviewed source code associated with the  
19 marketplace to determine scope of functionality, how it  
20 interacted with the Bitcoin blockchain, and how it facilitated  
21 and processed transactions between buyers and sellers.

22 Q. And you mentioned source code, what is source code?

23 A. So source code generally is sort of a series of  
24 instructions that a computer follows. It dictates when you run  
25 a program, like an app on your phone or on your computer, what

03TASEC5

Edman - Direct

1 series of steps it follows and what functionality that  
2 application has.

3 Q. And so let's move on from Mitre.

4 What was your next professional experience?

5 A. After Mitre, I worked for a company based here in New York  
6 called Bloomberg. They're a global financial services and  
7 media company.

8 Q. And just very quickly, could you just give an overview of  
9 the type of work you did at Bloomberg?

10 A. Yeah. I was a member of the vulnerability analysis team.  
11 And my work was focused on reviewing source code networks  
12 applications that Bloomberg software developers and network  
13 engineers were developing and deploying, analyzing that  
14 software and systems, and, you know, identifying  
15 vulnerabilities before -- essentially before the bad guys do.

16 Q. And where did you go after Bloomberg?

17 A. After Bloomberg I went to a consulting firm called FTI  
18 Consulting as a member of the global risk and investigations  
19 practice.

20 Q. And while you were at FTI, did you do any work related to  
21 crypto assets?

22 A. I did.

23 Q. Can you just briefly describe that type of work?

24 A. Yeah. So an example of one of the cases that I worked on  
25 was in relation to the prosecution of an individual who created

03TASEC5

Edman - Direct

1 a virtual currency exchange. That was being investigated and  
2 was seized by the secret service in connection with money  
3 laundering investigations.

4 Q. And so after FTI, where did you go?

5 A. After FTI I went to another consulting firm with the same  
6 group. It was called Berkeley Research Group.

7 Q. And did any of your work at Berkeley Group relate to crypto  
8 asset investigations?

9 A. Yes. I worked on several investigations related to crypto  
10 assets.

11 Q. And could you just give one example quickly of a type of  
12 case you worked on at Berkeley?

13 A. Sure. So another example, fairly similar to the previous  
14 example, it was a case here in the Southern District of New  
15 York related to an individual who was accused of creating and  
16 operating an unregistered Bitcoin exchange.

17 Q. And did any of your work in that case relate to traditional  
18 payment systems in addition to crypto assets?

19 A. It did. So in that case, there were -- part of the case  
20 were allegations that the operator of this exchange was  
21 accepting credit card payments in exchange for Bitcoin. And  
22 then mis-categorizing those credit card payments. And so my  
23 work in that case involved analyzing the source code associated  
24 with this exchange, reviewing various databases of transactions  
25 that occurred on that exchange, reviewing blockchain data

03TASEC5

Edman - Direct

1 associated with those transactions, as well as how it  
2 interacted with credit card payment systems.

3 Q. And aside from the case you just described, have you worked  
4 on any other engagements related to payment systems?

5 A. Yeah. There have been a few. You know, as an example, in  
6 connection with my cybersecurity work, I was retained by a  
7 payment processing company that they had fallen victim to a  
8 hack. And we provided incident response and investigative  
9 capabilities. And part of my role in that case was analyzing  
10 the source code of sort of the backend systems of this payment  
11 processor, identifying the vulnerabilities, how the bad guy got  
12 in, and then scoping to determine what information they  
13 accessed and remediating the vulnerabilities.

14 Q. Okay. And after Berkeley Research Group, where did you go?

15 A. Left with my team and we started our own firm called NAXO.

16 Q. And you mentioned earlier that most of your work at NAXO  
17 relates to blockchain investigations. Have you testified in  
18 any of those cases?

19 A. I have. Since we've started NAXO, I've submitted written  
20 testimony in a number of cases including here in the Southern  
21 District of New York. Also testified at trial. It was a  
22 criminal case related to an individual. He worked for a -- it  
23 was an NFT marketplace called OpenSea. And he was accused of  
24 using information that he learned in connection with his job  
25 for OpenSea to sort of secretly make place trades on the

03TASEC5

Edman - Direct

1 platform and profit from them.

2 Q. And what were you asked to analyze in that case?

3 A. I was asked to analyze materials from a variety of sources.

4 In addition to analyzing the defendant's activity, on the  
5 OpenSea exchange I reviewed blockchain transactions associated  
6 with that activity, certain crypto asset, wallets that the  
7 defendant maintained. I reviewed log files from web servers  
8 associated with this platform. Also reviewed source code  
9 associated with basically the process of buying and selling  
10 NFTs on that platform.

11 Q. And, Dr. Edman, in addition to your computer science  
12 degrees, do you have any professional certifications related to  
13 blockchain analysis and investigations?

14 A. I do. I have a few certifications from a firm called  
15 Chainalysis, which is sort of an industry standard blockchain  
16 forensics tool firm. I have a Chainalysis investigative  
17 specialist certification, which is their highest level of  
18 certification, in addition to certifications specific to the  
19 Ethereum blockchain as well as some of the software products  
20 that Chainalysis offers.

21 Q. And just very briefly, how do these certifications relate  
22 to blockchain analysis?

23 A. So these certifications relate to blockchain analysis  
24 because they provide both basic and advanced knowledge of how  
25 blockchains operate, how to conduct investigations on

03TASEC5

Edman - Direct

1 blockchains, and essentially various aspects of the various  
2 blockchain protocols.

3 Q. And so aside from these Chainalysis certifications you have  
4 listed here, do you have any other certifications?

5 A. I do. I also have an access data certified examiner  
6 certification, which is a certification in the field of digital  
7 forensics.

8 Q. And what is digital forensics?

9 A. It's essentially the investigation analysis of electronic  
10 data. So, for example, images or copies of cell phones,  
11 reviewing documents, computer images, things like that.

12 Q. And were you retained as an expert in this case?

13 A. I was.

14 Q. And who hired you?

15 A. I was retained as an independent expert on behalf of the  
16 SEC.

17 Q. Are you being compensated for your work on this matter?

18 A. I am.

19 Q. At what rate?

20 A. I believe my time is billed at 1,190 per hour.

21 Q. Does your compensation depend at all on the outcome of this  
22 case?

23 A. It does not.

24 Q. Dr. Edman, did you prepare a demonstrative summarizing what  
25 you were retained to analyze in this case?

03TASEC5

Edman - Direct

1 A. I did.

2 MR. CARNEY: Mr. Haywood, can we please put up Edmond  
3 Demonstrative 2.

4 Q. And can you just walk us through what you were retained to  
5 analyze?

6 A. Sure. So my analysis in this case fell into two different  
7 buckets. The first bucket was I was asked to review the source  
8 code associated with an application called the LP server. I  
9 was asked to review that source code to determine the extent or  
10 scope of that application's functionality, identify how and to  
11 what extent this LP server application related to or may have  
12 interacted with the Terra blockchain. And then I was also  
13 asked to review a history of changes made to the LP server  
14 source code over time, both to determine how its capabilities  
15 may have changed over time and also who implemented those  
16 changes.

17 Q. And in connection with that analysis, were you also asked  
18 to review Terra blockchain data?

19 A. I was.

20 Q. And did you prepare a demonstrative summarizing what you  
21 were asked to review regarding the Terra blockchain data?

22 A. I did.

23 MR. CARNEY: Mr. Haywood, could we please put up  
24 Edmond Demonstrative 3, and can you please describe what you  
25 were asked to do with respect to the Terra blockchain?

03TASEC5

Edman - Direct

1 A. So in connection with my review and analysis of Terra  
2 blockchain data, I was asked to first identify purported Chai  
3 user merchant transactions, that based on my review of the LP  
4 server source code, I determined were likely to have been  
5 created by the LP server. And then analyze the overall  
6 activity on the Terra blockchain to determine what proportion  
7 of that activity is attributable to the LP server.

8 And then, finally, I was asked to, based on this  
9 analysis of the LP server source code as well as the Terra  
10 blockchain data, to provide an opinion as to whether those  
11 Terra blockchain transactions represented processing and  
12 settlement of transactions between Chai customers and  
13 merchants.

14 Q. And did you prepare a demonstrative summarizing what  
15 materials you considered in connection with your analysis in  
16 this case?

17 A. I did.

18 MR. CARNEY: Mr. Haywood, I ask you to please put up  
19 Edmond Demonstrative 4.

20 Q. And, Dr. Edman, could you just walk us through the sources  
21 of data that you considered in forming your opinions in this  
22 case?

23 A. Sure. So I reviewed and considered data from a variety of  
24 sources. I mentioned the source code for the LP server as well  
25 as the publicly available Terra blockchain data, but I also

03TASEC5

Edman - Direct

1 reviewed sort of a history or record of changes made to the  
2 source code derived from the tools that were used to develop  
3 and store that source code. I also reviewed internal  
4 communications between Terraform employees regarding the role  
5 and operation and development of the LP server, in addition to  
6 public statements that were made by Terraform employees  
7 regarding its relationship with Chai. And in connection with  
8 this case, I also reviewed deposition testimony provided by  
9 other witnesses.

10 Q. And can you summarize what skills and experience you relied  
11 on in analyzing that data?

12 A. I relied on my skills and experience related to blockchain  
13 analysis investigations and source code review.

14 Q. And, Dr. Edman, based on the information you reviewed, do  
15 you have a demonstrative summarizing your high level opinions  
16 regarding the LP server source code?

17 A. I do.

18 MR. CARNEY: And, Mr. Haywood, if we can please put up  
19 Edmond Demonstrative 5, and if you can just walk us through a  
20 summary of your opinions as it relates to the LP server?

21 A. Sure. So specific to the LP server, after reviewing and  
22 considering the materials I just described, I determined that  
23 the LP server application was developed by Terraform Labs  
24 employees. After reviewing the source code, I determined that  
25 it controlled what are called private keys associated with the

03TASEC5

Edman - Direct

1 purported Chai transactions that occurred on the Terra  
2 blockchain. And that its functionality was to replicate Chai  
3 user merchant transactions onto the Terra blockchain.

4 Q. And do you also have a demonstrative summarizing your  
5 high-level opinions regarding your analysis of the Terra  
6 blockchain?

7 A. I do.

8 MR. CARNEY: And, Mr. Haywood, if we can please put up  
9 Edmond Demonstrative 6.

10 Q. And can you walk us all through your summary of opinions  
11 related to the Terra blockchain?

12 A. Sure. So my high-level opinions after reviewing the LP  
13 server source code in connection with the public Terra  
14 blockchain data was that the purported Chai transactions on the  
15 terra blockchain were created by this LP server application,  
16 rather than by users of the terra blockchain. These  
17 transactions on the terra blockchain that were created by the  
18 LP server comprised over 45% of token transfers or exchanges  
19 between users on the terra blockchain during the period of  
20 June 2019 to May 2022.

21 These transactions, since the LP server controlled all  
22 of the private keys associated with the wallets involved in  
23 these transactions, just represented transfers between  
24 addresses controlled by Terraform Labs.

25 And based on all of this, I determined that the

03TASEC5

Edman - Direct

1 transactions generated by the LP server on the terra blockchain  
2 did not represent processing settlement of Chai transactions  
3 between users and merchants.

4 Q. And you've talked a bit about Chai here. Let me ask you,  
5 Dr. Edman, in connection with your analysis, did you review any  
6 source code or other materials from Chai?

7 A. I reviewed some sort of automatically generated e-mails  
8 that were related to source code that was stored by Chai, but  
9 those repositories were not public and were not available for  
10 review.

11 Q. And do you believe that the fact that they were not  
12 available for review impacted your ability to form the opinions  
13 you just summarized?

14 A. No. Based on the materials that were available for review,  
15 my opinion is that there were -- there was no other application  
16 or system separate from what was available that was relevant to  
17 my ability to answer the question of whether Chai transactions  
18 were processed and settled on the terra blockchain.

19 MR. CARNEY: And, Mr. Haywood, can we please take down  
20 this demonstrative now.

21 THE COURT: So just to make sure that everyone is  
22 clear, including the jury and the Court, is it your opinion  
23 that Chai users were not using Terra to execute their  
24 transactions, but that Terra was simply recording certain data  
25 to mirror those transactions; do I have that?

03TASEC5

Edman - Direct

1 THE WITNESS: Correct.

2 THE COURT: Okay. Go ahead.

3 MR. CARNEY: Thank you, your Honor.

4 BY MR. CARNEY:

5 Q. So, Dr. Edman, before we get into the substance of your  
6 opinions, could you just describe for us what you mean by  
7 crypto assets?

8 A. Yeah. So crypto assets sometimes called cryptocurrencies  
9 refer to a digital asset, exists only in electronic form. You  
10 can kind of think of it -- there's a variety of different types  
11 of crypto assets, but you can think of it generally like a form  
12 of electronic money that you can send and receive over the  
13 internet without relying on a trusted intermediary, like a bank  
14 or a third-party application like Venmo or CashApp.

15 Q. And you've mentioned a few times so far, the term  
16 "blockchain," can you just describe what is a blockchain?

17 A. A blockchain is how transfers of crypto assets are  
18 recorded. You can think of it kind of like a ledger in your  
19 checkbook, although fewer and fewer people have those these  
20 days, so I might have to come up with a new analogy. But the  
21 idea is that, you know, like your checkbook, the ledger records  
22 transfers to and from your account, except the difference is  
23 that on a blockchain, everybody shares the same ledger and that  
24 this ledger is public.

25 So anybody can access this blockchain. They can

03TASEC5

Edman - Direct

1 review transactions not only that they created but that anybody  
2 else created, and it's all secured by cryptography where each  
3 set of transactions is cryptographically linked to the previous  
4 set of transactions so that everybody can verify that, for  
5 example, nobody has tried to spend crypto assets that they  
6 didn't have, or that nobody has tampered with the blockchain.

7 Q. And are there examples of some common blockchains that  
8 folks might have heard of?

9 A. Some of the more commonly known blockchains include like  
10 Bitcoin and Etherum.

11 Q. And please just remind us what blockchain were you asked to  
12 analyze in this case?

13 A. The Terra blockchain.

14 Q. What does someone need to have in order to be able to send  
15 or receive crypto assets?

16 A. To send and receive crypto assets on the blockchain,  
17 typically you use what's called a wallet. It's a software  
18 application on your computer or on your phone. Sometimes it's  
19 a hardware device. It looks kind of like a little thumb drive.  
20 But your wallet takes care of all the complex cryptography  
21 involved in creating that transfer of crypto assets on a  
22 blockchain applying what's essentially a digital or electronic  
23 signature to that transfer, and then sending that transaction  
24 to the blockchain to be appended to this public ledger.

25 Q. And, Dr. Edman, did you prepare a demonstrative to show how

03TASEC5

Edman - Direct

1 a crypto wallet relates to the blockchain?

2 A. I did.

3 MR. CARNEY: Mr. Haywood, can we please put up Edmond  
4 Demonstrative 7.

5 Q. And can you sort of walk us through what you're showing on  
6 your demonstrative?

7 A. Sure. So on the left, the picture of a wallet, you have a  
8 number of what are called wallet addresses. They look sort of  
9 random, but you can kind of think of them like an account  
10 number on the blockchain. Each of those wallet addresses  
11 generally has what's called a private key associated with it.  
12 And a private key is a concept from cryptography where it's  
13 basically a really big random number that only you know and  
14 that you keep secret. And when you want to transfer crypto  
15 assets from your wallet to somebody else on the blockchain,  
16 your wallet software, you create the transaction that  
17 specifies, you know, I want to send this amount from this  
18 address within my wallet to somebody else. And then you use  
19 your private key associated with that address to  
20 cryptographically sign that net transaction.

21 So once it's sent to the blockchain, anybody can look  
22 at the ledger and they can verify that this transaction has a  
23 valid signature corresponding to that wallet address. And  
24 each -- within a wallet, you can have multiple wallet  
25 addresses. It's kind of like, you know, in your wallet you

03TASEC5

Edman - Direct

1 might have multiple credit cards or debit cards, each of which  
2 has a unique account number. And so, similarly, your wallet  
3 you can have multiple wallet addresses, each may represent a  
4 different account.

5 Q. And so can I safely give someone else my wallet address?

6 A. You can give them your wallet address. That's information  
7 that can be public. It's derived from the private key in a way  
8 such that given the wallet address you can't work backwards to  
9 determine the private key. But you can verify that this  
10 transaction was validly signed by a secret associated with that  
11 address.

12 Now, if you give somebody your private key, however,  
13 then they can control the crypto assets in your wallet.

14 Q. If I don't have a copy of my private keys, can I still  
15 control my crypto assets?

16 A. In some scenarios, yes. There's a concept called a  
17 custodial wallet where somebody else basically assumes the  
18 complexity of managing private keys and crypto assets and  
19 interactions with the blockchain on your behalf instead of you  
20 running this software on your computer or on your phone. And,  
21 in that case, you -- an example may be like Gemini or Coinbase  
22 could be examples of a custodial wallet.

23 MR. CARNEY: Mr. Haywood, we could take this  
24 demonstrative down. Thank you.

25 Q. What are some types of crypto assets on the Terra

03TASEC5

Edman - Direct

1 blockchain?

2 A. The Terra blockchain had a variety of crypto assets, which  
3 included UST and Luna.

4 Q. And are you familiar with the concept of a validator?

5 A. Yes. So validators are sort of special notes on the Terra  
6 blockchain network. They have the ability to aggregate,  
7 validate, and verify transactions created by other users of the  
8 Terra blockchain, and then essentially add those transactions  
9 once they've been validated to the Terra blockchain. In  
10 exchange for doing that, they receive sort of rewards in the  
11 form of transaction fees paid by the other users.

12 Q. And are you familiar with a concept called the delegator?

13 A. So running a validator can be somewhat complex. You have  
14 to run special software on a computer that is basically  
15 available and online all the time. So it's not something that  
16 you can really run on your phone or on your laptop all that  
17 reliably.

18 So there's a concept of a delegator where instead of  
19 running the validator software yourself, you basically -- you  
20 delegate some of your Luna tokens to one or more validators,  
21 which acts kind of like a vote for that validator. And  
22 validators that either have put up their own Luna or staked  
23 their own Luna in combination with Luna that the delegators  
24 have delegated to that validator. They are sort of chosen  
25 proportionally to validate and add transactions to the Terra

03TASEC5

Edman - Direct

1 blockchain.

2 Q. And did delegators receive any benefit for delegating their  
3 tokens?

4 A. They do. They receive sort of a portion of the rewards  
5 earned by the validators to which they have staked their  
6 tokens.

7 Q. Do validators and delegators benefit from an increased  
8 volume of transactions on the Terra blockchain?

9 A. Of course. Since validators and delegators sort of receive  
10 rewards in the form of transaction fees paid by users on the  
11 Terra blockchain, if there are more transactions and more fees,  
12 and more fees equals more rewards. If there aren't any  
13 transactions to validate, then there aren't really rewards to  
14 earn.

15 Q. And what crypto assets on the Terra blockchain did you  
16 analyze in this case?

17 A. In this case, my analysis was focused on a crypto asset  
18 called KRT.

19 Q. And what is KRT?

20 A. KRT is what's called a stablecoin, where it's value was at  
21 least intended to correspond to the Korean won.

22 Q. And earlier you mentioned that your opinions in this case  
23 related to a service called Chai. What is your understanding  
24 of what Chai was?

25 A. My understanding of what Chai was is it was a Korean

03TASEC5

Edman - Direct

1 payment processor, sort of like a Korean PayPal.

2 Q. And in your opinion is it accurate to say that Chai ran its  
3 payment services on the Terra blockchain?

4 A. No. Based on my analysis of the materials in this case,  
5 it's my opinion that Chai transactions were not processed and  
6 settled on the Terra blockchain.

7 Q. When you say transactions were not processed and settled on  
8 the Terra blockchain, what do you mean by that?

9 A. I mean that Chai merchants were not paid by their customers  
10 in KRT on the Terra blockchain.

11 Q. How were Chai merchants paid then?

12 A. My understanding is that they were paid in fiat currency,  
13 basically Korean won.

14 Q. So if in your opinion Chai users and merchants were not  
15 paying each other on the Terra blockchain, then what were the  
16 supposed Chai transactions on the Terra blockchain  
17 representing?

18 A. My opinion is that the Chai transactions on the Terra  
19 blockchain were just sort of mirroring or replicating  
20 transactions that occurred on Chai.

21 Q. Let's talk about the LP server. What is the LP server?

22 A. The LP server was a piece of software that essentially  
23 received information about Chai transactions and then generated  
24 blockchain transactions on the Terra blockchain corresponding  
25 to those Chai transactions.

03TASEC5

Edman - Direct

1 Q. And do you know what LP stands for by the way?

2 A. In the context of crypto assets, LP usually stands for  
3 liquidity provider or liquidity pool. It's just kind of like a  
4 group of crypto assets used to facilitate certain types of  
5 transactions.

6 Q. And, Dr. Edman, what did you review in forming your  
7 opinions regarding the LP server?

8 A. Regarding the LP server, I reviewed primarily the LP server  
9 source code itself or how it was programmed. I reviewed  
10 history of changes made to the LP server, including who made  
11 those changes, and I also reviewed Terra blockchain  
12 transactions created by the LP server. I also reviewed various  
13 internal -- called Slack conversations. It's sort of like a  
14 chat application. Involving the development and the role of  
15 the LP server.

16 Q. And do you have an understanding as to where the LP server  
17 source code you reviewed was stored?

18 A. The LP server source code I reviewed was stored on a  
19 website called GitHub.

20 Q. And what is GitHub?

21 A. GitHub is -- it's a publicly available website or service  
22 that companies and individuals can use to share and collaborate  
23 on the development of source code.

24 Q. And does it use a particular computer program?

25 A. Yes. So GitHub, as the name suggests, it uses a program.

O3TASEC5

Edman - Direct

1 It's called Git, which is a software tool for storing not just  
2 source code, but also metadata about the source code like the  
3 history of changes that were made to the source code, what  
4 lines were modified in the source code, how were they changed,  
5 and when were they changed.

6 Q. How does Git do that, store this information you just  
7 described?

8 A. Git stores this information in kind of its own little form  
9 of a database called a repository.

10 Q. Is there a name for a group of changes made to a Git  
11 repository?

12 A. A related set of changes to source code in a Git repository  
13 is called a commit.

14 Q. Was the LP server repository on GitHub publicly available?

15 A. No. The LP server GitHub repository was a private GitHub  
16 repository within a Terraform Labs GitHub account.

17 Q. In this case, did you review the history of changes, or as  
18 you described them "commits" made to the LP server at Git  
19 repository?

20 A. I did.

21 Q. And did you prepare a chart summarizing the history of  
22 changes to the LP server source code?

23 A. I did.

24 MR. CARNEY: Mr. Haywood, if I can ask you just  
25 display to the witness, not to the jury, Plaintiff's Exhibit

O3TASEC5

Edman - Direct

1 203.

2 Q. Dr. Edman, do you recognize this exhibit?

3 A. I do.

4 Q. And without getting into the content or the details of it,  
5 what is it?6 A. It shows the sort of timeline of changes made to the LP  
7 server GitHub repository.

8 Q. Did you prepare this chart?

9 A. I did.

10 Q. And what was the source of the data that you relied on?

11 A. The source of the data was the LP server Git repository  
12 that was produced in discovery.

13 Q. And how did you prepare this chart?

14 A. I used the Git software to extract the history of changes  
15 made to the repository, aggregated that information, and then  
16 created this timeline.17 Q. And is this chart an accurate summary of the history of  
18 changes made to the LP server at GitHub repository?

19 A. It is.

20 MR. CARNEY: Your Honor, at this time I would move for  
21 the admission of Plaintiff's Exhibit 203.

22 THE COURT: Any objection?

23 MR. CALIFANO: No objection, your Honor.

24 THE COURT: Received.

25 (Plaintiff's Exhibit 203 received in evidence)

O3TASEC5

Edman - Direct

1 MR. CARNEY: Thank you. Mr. Haywood, you may publish  
2 it. Thank you.

3 BY MR. CARNEY:

4 Q. Dr. Edman, what sort of information is included in this  
5 GitHub commit history data?

6 A. Well, on the top is sort of a timeline of changes made to  
7 the LP server Git repository aggregated by month. And then at  
8 the bottom, it is a table showing the different contributors or  
9 authors of changes to this Git repository. When they made  
10 their first change to the repository, when they made the last  
11 change or commit to the repository, and the total number of  
12 commits that each account made to the LP server GitHub  
13 repository.

14 Q. And based on your analysis, when was the LP server software  
15 server created?

16 A. So you can see in the bottom table, in the first commit  
17 column, the first commit to the LP server Git repository was  
18 made on June 10, 2019.

19 Q. And who created that commit?

20 A. It was created by Paul Kim.

21 Q. Do you know who Paul Kim is?

22 A. Based on my analysis of materials in this case, he was the  
23 primary developer of the LP server.

24 Q. And if we look at the bottom of Exhibit 203, it says  
25 Paul@terra.money, what does that indicate to you?

03TASEC5

Edman - Direct

1 A. So each account on GitHub or used to create or commit to a  
2 Git repository has an e-mail address associated with it and  
3 also like a human readable name.

4 So in this case, it shows that the account used to  
5 create this commit was associated with the e-mail address was  
6 Paul@terra.money.

7 Q. And do you have an understanding of what company the  
8 terra.money domain is associated with?

9 MR. CALIFANO: Objection, your Honor. Foundation.

10 THE COURT: Well, lay a foundation.

11 Q. Dr. Edman, do you have a reason to understand the company  
12 that uses the terra.money web domain? Without answering, but  
13 do you have a basis for knowing that?

14 A. Yes.

15 Q. And what is that basis?

16 A. The basis is the various materials that I reviewed in this  
17 case, which included in addition to this Git repository,  
18 e-mails, Slack communications from individuals associated with  
19 Terraform Labs in which they used this terra.money domain.

20 MR. CARNEY: And so if I may ask the question again,  
21 your Honor.

22 Q. What company do you understand to be associated with the  
23 terra.money domain?

24 MR. CALIFANO: Objection, your Honor. Foundation and  
25 timing particularly.

O3TASEC5

Edman - Direct

1                   THE COURT: No. I think you can inquire on cross, but  
2 I think there's sufficient *prima facie* basis there to put that  
3 question. You may answer.

4 A. It's my understanding that the terra.money domain is  
5 associated with Terraform Labs.

6 Q. And, Dr. Edman, when does it say the most recent commit was  
7 made to the LP server Git repository?

8 A. The most recent commit is in the last commit column and  
9 that was also made by Paul Kim using the account  
10 Paul@terra.money. And that was Thursday, December 9 in 2021.

11 Q. And right below the box that you've highlighted, it says,  
12 Han Ju Kim as an author. Do you have an understanding as to  
13 who Han Ju Kim is?

14 A. My understanding is Han Ju Kim is the same person. Paul  
15 Kim is like his English nickname. And you can see that the  
16 e-mail addresses are the same with both accounts. And so it  
17 indicates that it's associated with the same GitHub account.

18 Q. And so how many total commits were made to the LP server  
19 GitHub repository?

20 A. There were 45 total commits between June 2019 and  
21 December 2021.

22 Q. And how many of those commits were made by Paul Kim?

23 A. All but one of them.

24 Q. Well, who made the other commit?

25 A. It was an individual who I understand to be named Yun Yeo.

03TASEC5

Edman - Direct

1 Q. And what was his e-mail address?

2 A. His e-mail address was Yun@terra.money.

3 Q. So, Dr. Edman, in your opinion who was primarily  
4 responsible for creating the LP server software?

5 A. Paul Kim was primarily responsible for creating and  
6 developing the LP server software.

7 Q. And what GitHub company account was used to store the LP  
8 server source code?

9 A. It was Terraform Labs' GitHub company account.

10 MR. CARNEY: Mr. Haywood, I'm going to ask you to  
11 display just to the witness Plaintiff's Exhibit 297.

12 Q. Dr. Edman, is this one of the files you reviewed in the LP  
13 server Git repository?

14 A. This is.

15 Q. And without getting into any of the details of the file,  
16 what generally is this file?

17 A. This file generally is what's often called the license file  
18 which provides -- it's commonly included in Git repositories or  
19 with software to show who, you know, created the software and  
20 any sort of terms of use or licensing information associated  
21 with that software.

22 Q. And how did you obtain the data shown in this exhibit?

23 A. I used the Git software to extract it from the LP server  
24 Git repository.

25 Q. So the data that we see here in Plaintiff's Exhibit 297, is

03TASEC5

Edman - Direct

1 that information that was contained within the LP server Git  
2 repository?

3 A. It was.

4 MR. CARNEY: Your Honor, at this time I would move for  
5 the admission of Plaintiff's Exhibit 297 into evidence.

6 MR. CALIFANO: I'm just going to object to relevance,  
7 your Honor.

8 THE COURT: Well, given the very broad definition of  
9 relevance, under Rules 401 and 402, I think it passes.

10 Received.

11 (Plaintiff's Exhibit 297 received in evidence)

12 MR. CARNEY: Thank you, your Honor.

13 You may publish it, Mr. Haywood. Thank you.

14 BY MR. CARNEY:

15 Q. Dr. Edman, who created this file in the LP server Git  
16 repository?

17 A. So you can see on the left this file was created by Paul  
18 Kim on June 10, 2019.

19 Q. And what does the top of the license file itself say?

20 A. The top of the file on the right says Terraform Labs  
21 confidential.

22 Q. And does it contain a copyright notice?

23 A. It does.

24 Q. And who does that copyright belong to?

25 A. It says copyright 2018 to present, Terraform Labs Inc.

03TASEC5

Edman - Direct

1 MR. CARNEY: You can take this exhibit down, please.

2 Thank you, sir.

3 BY MR. CARNEY:

4 Q. In addition to the LP server's license file, did you review  
5 the source code of the LP server itself to determine how it  
6 operated?

7 A. I did.

8 Q. And, Dr. Edman, you mentioned that there were 45 commits or  
9 changes to the LP server between June 2019 and December 2021.  
10 Did its functionality change significantly over time?

11 A. It did. After reviewing the series of changes made to the  
12 LP server source code, I determined that the functionality of  
13 the LP server software changed significantly in December 2019,  
14 compared to how it operated when it was created in June of  
15 2019.

16 Q. Okay. So let's start with how the LP server operated when  
17 it was created in June 2019, so before December 2019. Have you  
18 prepared a demonstrative to show how the LP server operated  
19 when it was created?

20 A. I did.

21 MR. CARNEY: Mr. Haywood, I would ask that you please  
22 put up Edmond 8.

23 Q. So we have your demonstrative up here, Dr. Edman, it's a  
24 fairly complex looking diagram. Can you sort of walk us  
25 through what you're showing on here?

03TASEC5

Edman - Direct

1 A. Sure. So it does look complex, but really there are only  
2 three main components to focus on.

3 One, on the left is what's called a rest API. And API  
4 is basically a way for computer programs to talk to each other.  
5 On the top there's a component called batch terra, and then on  
6 the bottom there's a component called batch Tempura.

7 So the rest API on the left receives information about  
8 Chai transactions, such as the user ID, the merchant ID, and  
9 transaction amount. And depending on which API end point is  
10 called, it will send that information either to the top  
11 component, batch Terra, or to the bottom component, batch  
12 Tempura, or sometimes both.

13 The batch Terra component, for example, will look at  
14 the user ID that was provided to the application and it will  
15 check a database that it keeps alongside the source code of  
16 wallets, of Chai user wallets, and it will look up this user ID  
17 in that database to see if it has a wallet and private key  
18 associated with that ID. If it doesn't, I will create one and  
19 then store it in the database.

20 The batch Terra component will aggregate all of the  
21 inputs that it's received over a period of time from the rest  
22 API, and then use the private keys that it either pulled from  
23 the database or that it created to create and cryptographically  
24 sign two transactions. One, sending KRT from a special wallet,  
25 called the LP wallet, to the Chai user wallets from the

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Edman - Direct

1 database. At the same time, it will also create a second  
2 transaction sending KRT from the Chai user wallets back to the  
3 LP wallet. And it will send both of those to the Terra  
4 blockchain.

5 The batch Tempura component on the bottom operates  
6 basically the same way except instead of sending transactions  
7 to the Terra blockchain, it sends transactions to the Tempura  
8 blockchain.

9 Q. And, Dr. Edman, based on your analysis of the LP server  
10 source code, who or what controlled the private keys associated  
11 with these wallets?

12 A. The LP server controlled all of the private keys. They  
13 were stored in the little cylinder labeled wallets on the  
14 graph.

15 Q. And could Chai users access their private keys associated  
16 with their wallet addresses on the Terra blockchain?

17 A. No. Not based on the evidence I have seen.

18 Q. All right. So if users couldn't access their private keys  
19 to create Chai transactions, what created the Chai transactions  
20 on the Terra blockchain?

21 A. The Chai transactions on the Terra blockchain were created  
22 by the LP server software.

23 Q. And in your description here of how the LP server operated,  
24 why didn't you mention anything about transactions to or from  
25 Chai merchant addresses?

03TASEC5

Edman - Direct

1 A. So during this time period, even though the rest API  
2 received both a users ID and a merchant ID, it essentially  
3 ignored the merchant ID and it only created transactions  
4 involving Chai user wallets.

5 Q. And you also have mentioned on here a batch Tempura  
6 component. What is your understanding of what "Tempura" refers  
7 to?

8 A. Well, at least in this context my understanding is that  
9 Tempura refers to a private blockchain.

10 Q. And what is a private blockchain?

11 A. So a private blockchain, in contrast to a public blockchain  
12 like Bitcoin, refers to a blockchain that's usually used just  
13 internally within an organization since it's private and not  
14 everybody can view the transactions on that blockchain.

15 Q. In the documents you reviewed in this case, did you  
16 identify any other references to this private Tempura  
17 blockchain?

18 A. I did.

19 MR. CARNEY: Mr. Haywood, I'm going to ask that you  
20 display to the witness and the jury Plaintiff's Exhibit 143a  
21 which has already been admitted.

22 Have you seen this --

23 THE COURT: Counsel, keep in mind that because it is  
24 Friday afternoon. I want to give the jury a ten-minute break  
25 in around 3:00. So pick an appropriate time.

03TASEC5

Edman - Direct

1 MR. CARNEY: This would be a great time, your Honor.

2 THE COURT: Okay. So, ladies and gentlemen, I do want  
3 to hold it to ten minutes, so let's take a ten-minute break.

4 Step down. We will see you in ten minutes.

5 (Jury not present)

6 THE COURT: Please be seated. All right. We'll see  
7 you all in ten minutes.

8 (Recess)

9 (Continued on next page)

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03T5sec6

Edman - Direct

1                   THE COURT: Let's bring in the jury and get the  
2 witness back on the stand.

3                   How much longer do you have on direct?

4                   MR. CARNEY: I am more than halfway through my  
5 outline, your Honor, so I am really aiming for that 4:00.

6                   THE COURT: Yes, because as you know, we need to.

7                   MR. CARNEY: I am going to cut on the fly, if I can.

8                   (Continued on next page)

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Edman - Direct

1 (Jury present)

2 THE COURT: Please, be seated.

3 Go ahead, counsel.

4 MR. CARNEY: Thank you, your Honor.

5 Mr. Haywood, could you please bring up again  
6 Plaintiff's Exhibit 143-A, which has already been admitted into  
7 evidence?

8 BY MR. CARNEY:

9 Q. Dr. Edman, is this one of the documents that you reviewed  
10 in connection with your analysis?

11 A. It is.

12 Q. And what is this document, to your understanding?

13 A. This is a transcript of a Slack conversation involving Do  
14 Kwon.

15 Q. How did this Slack conversation factor into your opinions?

16 A. It involves Do Kwon talking about the Terraform blockchain  
17 chain and the Tempura blockchain.

18 MR. CARNEY: If you can please turn to the third page?

19 Q. And I would ask you to please read the fifth and sixth  
20 entries.

21 A. Do Kwon says: We are not using any Terra blockchain  
22 technology, we are using a private blockchain called Tempura.

23 Q. How did that factor into your analysis?

24 A. Well, based on the context of this conversation and my  
25 review and consideration of the various materials, Do Kwon is

03T5sec6

Edman - Direct

1 saying that Chai is not using any Terraform blockchain  
2 technology but is, instead, using a private blockchain called  
3 Tempura.

4 Q. If you can please skip to the last page and I would ask you  
5 to read the fourth and fifth entries from the bottom.

6 A. Do Kwon says: Already lots of people figured out their own  
7 wallet addresses and some have (this is harder, so not sure  
8 how) discovered evidence of the Tempura blockchain, too.

9 Q. Let me ask you, Dr. Edman, in your experience as a  
10 blockchain expert, is it necessary for people to have to figure  
11 out their own wallet addresses on the blockchain?

12 A. No. So your wallet address is usually just provided to you  
13 by your wallet software, or if you are using a custodial wallet  
14 like CoinBase, for example, they will tell you a deposit  
15 address associated with your account, you don't have to try to  
16 figure it out and guess.

17 Q. Did you analyze any Chai transactions created by the  
18 LP Server on the Tempura blockchain?

19 A. No. The Tempura blockchain was not available for review.

20 Q. Do you believe that impacted your ability to form your  
21 opinions in this case?

22 A. No. The scope of my analysis was related to whether or not  
23 Chai transactions were processed and settled on a Terra  
24 blockchain, not the Tempura blockchain.

25 Q. Dr. Edman, you just walked us through a demonstrative where

03T5sec6

Edman - Direct

1 you showed us how the LP Server worked before December 2019.

2 Did you prepare a demonstrative showing how the LP Server  
3 worked after December 2019?

4 A. I did.

5 MR. CARNEY: And Mr. Haywood, if we could put up Edman  
6 demonstrative 9, please?

7 Q. If you can quickly walk us through this, explain the  
8 differences from what you said before.

9 A. Sure. So the main difference here is pretty much the  
10 entire bottom of the chart is gone. The references and the  
11 functionality related to the Tempura blockchain was removed and  
12 the LP Server only interacted with the Terra blockchain. The  
13 rest of API was also modified so instead of receiving  
14 information including user and merchant ID, it was changed to  
15 only receive a "from" ID and "to" ID, and then the transactions  
16 that it created on the Terra blockchain modified where as  
17 before it created two, here it only creates one.

18 Q. Great.

19 MR. CARNEY: We can take this one down, please.

20 Q. Did you analyze any Chai transactions created by the  
21 LP Server on the Terra blockchain?

22 A. I did.

23 Q. Did the Terra blockchain data publicly available?

24 A. It is.

25 Q. Did you prepare a demonstrative showing how you prepared

03T5sec6

Edman - Direct

1 the Terra blockchain data?

2 A. I did.

3 MR. CARNEY: Mr. Haywood, if we can please put up  
4 Edman demonstrative 10.

5 Q. If you could just quickly walk us through how you obtained  
6 the Terra blockchain data?

7 A. Sure. So I obtained and analyzed Terra blockchain data  
8 from multiple independent sources. The first was a website  
9 called Terra Finder, which is a publicly accessible -- it is  
10 called a block explorer, which is a website that lets you view  
11 and sort of interact with a blockchain, just kind of like you  
12 are interacting with a normal website. I also reviewed public  
13 snapshots of public Terra blockchain data from a website called  
14 quicksync.io which archives snapshots of various blockchain,  
15 including Terra, at various points in time. I also reviewed  
16 data from, it is called a Google BigQuery database which is a  
17 database for large data analysis. That was created by a  
18 consultant for the SEC and it was populated from data from  
19 Terra Finder. So I reviewed the data that was used to populate  
20 that database and including the software and tools that were  
21 used to extract and populate that database. And then I looked  
22 at these various sources of data to ensure that they were  
23 consistent with each other.

24 MR. CARNEY: We can take that down. Thank you.

25 Q. Once you obtained the Terra blockchain data, how did you

03T5sec6

Edman - Direct

1 identify the Chai transactions created by the LP Server on the  
2 Terra blockchain?

3 A. So based on my review of the LP Server source code,  
4 identified a number of properties associated with the  
5 transactions that the LP Server generated on the Terra  
6 blockchain, and then I searched through and analyzed the Terra  
7 blockchain data to identify those transactions, based on those  
8 properties.

9 Q. Do you have demonstrative showing how you identified those  
10 Chai transactions?

11 A. I do.

12 MR. CARNEY: If we could please pull up Edman  
13 demonstrative 11?

14 Q. Dr. Edman, if you could kind of quickly walk us through how  
15 you identified the characteristics of these transactions?

16 A. Sure. So, as I mentioned, these transaction  
17 characteristics were derived from reviewing the LP Server  
18 source code. In general, all of the transactions used a  
19 particular message type called Message MultiSend, which  
20 compared to what is called a Message Send Transaction that lets  
21 you just send crypto assets from one address to another  
22 address, a Message MultiSend lets you send crypto assets from  
23 several input addresses to several output addresses all within  
24 the same transaction. All of the transactions used KRT as the  
25 crypto asset. The special LP wallet controlled by the

03T5sec6

Edman - Direct

1 LP Server had a unique wallet address that was always the  
2 input, output, or both in a transaction. All of the same --  
3 all of the transactions had the same number of inputs and  
4 outputs and the input amount and the output amount were equal.  
5 And then, prior to the changes that I mentioned to the  
6 LP Server in December 2019, they all included a memo field that  
7 was either Terra batch: LP to user, or Terra batch: User to  
8 LP.

9 Q. Did you do anything to verify the characteristics of the  
10 LP Server transactions that you just described that they were  
11 accurate?

12 A. I did.

13 Q. And what did you do?

14 A. I reviewed public statements that Do Kwon made in  
15 Terraform's public discord channel, which is another chat  
16 application, and compared those transactions that Do Kwon  
17 identified as Chai transactions to these properties.

18 MR. CARNEY: And Mr. Haywood, if you could just please  
19 display to the witness Plaintiff's Exhibit 302?

20 Q. Do you recognize this document?

21 A. I do.

22 Q. What is it?

23 A. It's a screenshot of Do Kwon's Discord message identifying  
24 certain transactions as Chai transactions.

25 Q. And what is Discord?

03T5sec6

Edman - Direct

1 A. It is a chat application, sort of like Slack or WhatsApp.

2 Q. And how did you obtain this document?

3 A. I viewed Terraform's public Discord channel and then I had  
4 a colleague take a screenshot of this particular message.

5 MR. CARNEY: Your Honor, this exhibit has been  
6 stipulated to as admissible, so I would move for the admission  
7 of Plaintiff's Exhibit 302.

8 THE COURT: Received.

9 (Plaintiff's Exhibit 302 received in evidence)

10 BY MR. CARNEY:

11 Q. Dr. Edman, could you please read the message at the bottom  
12 of this exhibit into the record?

13 A. At the bottom Do Kwon says: Transactions from Chai  
14 committing to the chain well. Check out blocks starting from  
15 block 70K on terra.stake.id. Will write a blog post soon  
16 regarding.

17 Q. What do the four squares displayed in the message show?

18 A. Those are thumbnails of screenshots of Terra blockchain  
19 transactions that Do Kwon is identifying as Chai transactions.

20 Q. Were you able to review those screenshots?

21 A. I was.

22 Q. Did you analyze the transactions that Do Kwon identified as  
23 Chai transactions?

24 A. I did.

25 MR. CARNEY: I'm going to ask Mr. Haywood if you could

03T5sec6

Edman - Direct

1 just display to the witness Plaintiff's Exhibits 309 and 310.

2 Q. Did you review these documents in forming your opinions?

3 A. I did.

4 Q. And what is this? What are they?

5 A. These are page captures from the Terra Finder websites that  
6 correspond to the transactions that Do Kwon identified as Chai  
7 transactions.

8 Q. And how did you obtain them?

9 A. I viewed the public Terra Finder website myself and created  
10 the page captures.

11 Q. And I think you talked a little bit about Terra Finder  
12 earlier but can you quickly remind us what Terra Finder is?

13 A. It is just a publicly available block explorer that lets  
14 you view information about and on the Terra blockchain just  
15 like a normal website so you can view transactions, wallet  
16 addresses, and various activity on the blockchain.

17 Q. And do you have an understanding as to who operates Terra  
18 Finder?

19 A. My understanding is that Terraform Labs operates Terra  
20 Finder.

21 Q. Is there anything on Plaintiff's Exhibits 309 and 310 that  
22 shows its relationship to Terraform Labs?

23 A. At the bottom it has the URL or the address of these  
24 particular page captures and you can see that the domain is the  
25 Terra.money domain.

03T5sec6

Edman - Direct

1 MR. CARNEY: Your Honor, at this time I would move for  
2 the admission of Plaintiff's Exhibits 309 and 310 into  
3 evidence.

4 MR. CALIFANO: No objection, your Honor.

5 THE COURT: Received.

6 (Plaintiff's Exhibit 309 and 310 received in evidence)  
7 BY MR. CARNEY:

8 Q. How did these -- first of all, can you just describe, now  
9 that the jury is able to see Plaintiff's Exhibits 309 and 310,  
10 what is shown here?

11 A. Sure. So these are just page captures or basically like  
12 printouts from the Terra websites. Each of these pages  
13 corresponds to a transaction from Do Kwon's Discord message.

14 Q. So the Discord message that we looked at a few minutes ago,  
15 these were two of the transactions in that message?

16 A. Correct.

17 Q. And based on your review of the LP Server source code, are  
18 the transactions Do Kwon identified as Chai transactions  
19 consistent with the criteria that you previously described in  
20 your demonstrative as the characteristics of LP Server  
21 transactions?

22 A. Yes, they are.

23 Q. And did you prepare a demonstrative comparing the  
24 transaction that we see here in Plaintiff's Exhibit 309 to the  
25 LP Server source code?

03T5sec6

Edman - Direct

1 A. I did.

2 MR. CARNEY: Can we please put up Edman demonstrative  
3 12? And we can take 309 down, please.

4 Q. It looks like there is a lot going on in this  
5 demonstrative. Can you break down, at a high level, what you  
6 are showing here?

7 A. Yes. So, on the left is sort of a subset of the source  
8 code from the LP Server, and then on the right are sections  
9 from the Terra Finder page capture. And the arrows show  
10 relationships between parts of the source code that create  
11 certain properties of the transaction and then on the right is  
12 how those properties will look on the Terra Finder website.

13 Q. And what is the timestamp of this transaction?

14 A. The timestamp is at the top on the right-hand side, it is  
15 June 11, 2019 at 3:38:02 a.m. in Eastern Time.

16 Q. And can you remind us, when was the first commit to the  
17 LP Server git repository?

18 A. It was the day before; June 10, 2019.

19 Q. What does the memo field say in this transaction over on  
20 the right side?

21 A. So, the memo, which was just highlighted previously in the  
22 source code and then now on the right side in the Terra Finder  
23 page corresponding to that transaction, it says Terra batch:  
24 LP to users.

25 Q. What is the memo field in the Terra blockchain used for?

03T5sec6

Edman - Direct

1 A. It was sort of like a freeform field. You can enter  
2 basically whatever information you want to sort of add context  
3 or information to a transaction.

4 Q. And what is your understanding of what is represented by  
5 the memo: Terra batch: LP to users, in this transaction?

6 A. So, based on my review of the source code, the memo Terra  
7 batch: LP to users represents or indicates a transaction  
8 sending KRT from the LP wallet to the purported Chai user  
9 wallets.

10 Q. And what is the LP wallet?

11 A. The LP wallet is sort of a special wallet controlled by the  
12 LP Server and it contains the KRT used to fund these  
13 transactions on the Terra blockchain.

14 Q. And looking at the next transaction that you had mentioned,  
15 Plaintiff's Exhibit 310, did you prepare a demonstrative for  
16 that transaction as well?

17 A. Yes.

18 MR. CARNEY: Could we please pull up Edman  
19 demonstrative 13?

20 Q. And what is the timestamp of this transaction?

21 A. This is also June 11, 2019, 3:38:33 a.m.

22 Q. About how long after the previous transaction that we  
23 looked at did this transaction occur?

24 A. It was about 30 seconds.

25 Q. And what is the memo of this transaction?

03T5sec6

Edman - Direct

1 A. The memo of this transaction is Terra batch: Users to LP.

2 Q. And how does that compare to the memo we saw in the  
3 previous transaction?

4 A. The previous memo was Terra batch: LP to users.

5 Q. And what do the inputs and outputs show here?

6 A. The inputs and the outputs here sort of shown on the right  
7 from the Terra Finder capture, you can see the inputs are all  
8 addresses, the first one is the LP wallet address and then this  
9 is a subset of the inputs, but the rest are addresses  
10 associated with purported Chai wallets. And then the outputs,  
11 if you can bring those up as well, you can see that the outputs  
12 are essentially going back to the LP wallet and the amounts are  
13 the same.

14 Q. And you mentioned a little while ago that these two  
15 transactions that we just looked at were 30 seconds apart.

16 What is the significance of that time difference?

17 A. The significance is that the LP Server was just generating  
18 transactions that send funds from the LP wallet to the  
19 purported Chai user wallets and then right back to the LP  
20 wallet.

21 Q. And did you analyze how frequently this cycle of sending  
22 KRT from the LP wallet to Chai user wallets and back to the LP  
23 wallet occurred?

24 A. I did.

25 Q. Did you prepare a demonstrative describing this analysis?

03T5sec6

Edman - Direct

1 A. I did.

2 MR. CARNEY: Can we please pull up Edman demonstrative  
3 14?

4 Q. What does this demonstrative show, Dr. Edman?

5 A. This demonstrative shows that prior to the changes made to  
6 the LP Server source code in December 2019, the general flow of  
7 funds corresponding to the Chai transactions, there were over  
8 a million transactions that sent KRT from the LP wallets to the  
9 purported Chai user wallets and then right back to the LP  
10 wallet.

11 Q. And based on your analysis, how many of those transactions  
12 involve Chai merchants?

13 A. None of them. The LP Server source code, prior to December  
14 2019, just ignored the merchant identifier.

15 Q. So, did you also prepare a chart summarizing Chai merchant  
16 transactions after December 2019?

17 A. I did.

18 MR. CARNEY: Mr. Haywood, if you could just show to  
19 the witness what has been marked as Plaintiff's Exhibit 209?

20 Q. First of all, Dr. Edman, this chart, did you prepare it?

21 A. I did.

22 Q. And what is this? Without getting into details, what does  
23 this summary chart show?

24 A. This summary chart shows the volume of transactions  
25 generated by the LP Server that did involve merchant addresses

03T5sec6

Edman - Direct

1 over time.

2 Q. And what is the source of the data that you used to create  
3 this summary?

4 A. I used actually data from the Terra blockchain. I also  
5 used data sources that I identified in the LP Server source  
6 code repository, as well as other documents produced in  
7 discovery that identified certain Terra blockchain wallet  
8 addresses, as well as Chai merchant addresses.

9 Q. Is this an accurate summary of the volume of Chai merchant  
10 transaction volume over time?

11 A. It is.

12 MR. CARNEY: Your Honor, I move for the admission of  
13 Plaintiff's Exhibit 209 into evidence.

14 MR. CALIFANO: No objection, your Honor.

15 THE COURT: Received.

16 (Plaintiff's Exhibit 209 received in evidence)

17 MR. CARNEY: We can publish this now, Mr. Haywood.

18 BY MR. CARNEY:

19 Q. Dr. Edman, what did your analysis show that is reflected in  
20 Plaintiff's Exhibit 209?

21 A. My analysis shows that prior to the changes made to the  
22 LP Server software in December 2019, there were no transactions  
23 on the Terra blockchain that involved Chai merchant addresses.  
24 How did that relate, if at all, that your analysis prior to  
25 December of 2019 the LP Server source code did not use merchant

03T5sec6

Edman - Direct

1 identifiers?

2 MR. CALIFANO: Objection. Foundation.

3 THE COURT: Overruled.

4 A. My analysis of the Terra blockchain transactions involving  
5 Chai merchant addresses is consistent with my analysis of the  
6 LP Server source code that ignored merchant identifiers prior  
7 to December 2019.

8 Q. So how is it you are able to identify which Terra  
9 blockchain transactions were Chai merchant transactions?

10 A. I principally relied on two data sources, one of them was  
11 certain source code in the LP Server source code repository  
12 that contained a list of Terra blockchain wallet addresses  
13 identified as Chai merchant addresses. I also reviewed  
14 database files from a website called Chai Scan, that inside  
15 those files also contained a list of Chai merchant addresses.  
16 And so, I compared and combined those files to derive a list of  
17 Chai merchant addresses on the Terra blockchain.

18 Q. You just mentioned a website called Chai Scan. What is  
19 Chai Scan?

20 A. Chai Scan was sort of a data visualization website that  
21 purported to show statistics and volume information related to  
22 Chai transactions on the Terra blockchain.

23 Q. And based on your analysis and review of documentation in  
24 this case, do you have an understanding as to who provided  
25 funding for the development of Chai Scan?

03T5sec6

Edman - Direct

1 A. Based on the documents I reviewed, my understanding is that  
2 Terraform Labs provided the funding to develop Chai scan.

3 Q. Based on your analysis, were Chai merchants able to  
4 withdraw the KRT in their Chai merchant wallets?

5 A. No, not based on the evidence I have reviewed.

6 Q. So who then, in your opinion, controlled the Chai merchant  
7 wallets?

8 A. All the Chai merchant wallets were controlled by the  
9 LP Server.

10 Q. Dr. Edman, did you analyze the volume of all of Chai  
11 transactions on the Terra blockchain generated by the  
12 LP Server, not just merchant transactions?

13 A. I did.

14 Q. Did you prepare a summary chart showing the volume of these  
15 LP Server transactions over time?

16 A. I did.

17 MR. CARNEY: And, Mr. Haywood if you could please just  
18 display to the witness Plaintiff's Exhibit 205?

19 Q. Did you prepare this chart, Dr. Edman?

20 A. I did.

21 Q. Without getting into the details, what does it show?

22 A. It shows the daily volume of purported Chai transactions  
23 created by the LP Server over time.

24 Q. How did you prepare this?

25 A. I prepared it by using the characteristics of an LP Server

03T5sec6

Edman - Direct

1 transaction that I described earlier in connection with  
2 analyzing the public Terra blockchain data to identify the Chai  
3 transactions and then sort of aggregate or show the volume over  
4 time.

5 Q. And what is the source of the data in this chart?

6 A. It is my analysis of the LP Server source code plus the  
7 Terra blockchain data.

8 Q. Is this an accurate representation of the LP Server  
9 transaction volume over time?

10 MR. CALIFANO: Objection; characterization,  
11 foundation.

12 THE COURT: Overruled.

13 A. It is.

14 MR. CARNEY: Your Honor, at this time I would move for  
15 the admission of Plaintiff's Exhibit 205 into evidence.

16 MR. CALIFANO: No objection, your Honor.

17 THE COURT: Received.

18 (Plaintiff's Exhibit 205 received in evidence)

19 MR. CARNEY: If we could please publish this chart?

20 BY MR. CARNEY:

21 Q. If you could quickly walk us through what this chart shows?

22 A. This generally shows how many transactions the LP Server  
23 was generating each day on the Terra blockchain.

24 Q. It appears that there is white lines some places along your  
25 chart. What do those represent?

O3T5sec6

Edman - Direct

1 A. Those represent days during which the LP Server didn't  
2 generate any transactions on the Terra blockchain.

3 Q. Does that mean that there were no Chai transactions on  
4 those days?

5 A. No, not necessarily.

6 Q. Did you also compare the volume of transactions generated  
7 by Terraform's LP Server to the volume of all transactions  
8 generated by other users on the Terra blockchain?

9 A. I did.

10 Q. Did you prepare another summary chart showing your  
11 analysis?

12 A. I did.

13 MR. CARNEY: If we could please just display to the  
14 witness Plaintiff's Exhibit 206?

15 Q. Is this the summary chart you prepared?

16 A. This is.

17 Q. What does this chart show?

18 A. It shows the percentage of token transfers on the Terra  
19 blockchain that were created by the LP Server compared to other  
20 non-LP Server transactions.

21 Q. And what is the source of this data?

22 A. The source of the data is, my analysis is the LP Server  
23 source code along with the public Terra blockchain data.

24 Q. Is this chart that you prepared accurate?

25 A. It is.

03T5sec6

Edman - Direct

1 MR. CARNEY: Your Honor, I would move for the  
2 admission of Plaintiff's Exhibit 206 into evidence.

3 MR. CALIFANO: Your Honor, may I voir dire for a  
4 minute?

5 THE COURT: All right.

6 VOIR DIRE EXAMINATION

7 BY MR. CALIFANO:

8 Q. Dr. Edman, when you mean accurate, what exactly are the  
9 numbers on -- how did you calculate the numbers again? Could  
10 you just explain that?

11 A. So these numbers are calculated based on analyzing the  
12 public Terra blockchain data to identify all native token  
13 transfers, essentially Message Send and Message MultiSend token  
14 transfers on the Terra blockchain, and then comparing that  
15 amount to transactions Message MultiSend transactions created  
16 by the LP Server.

17 Q. So, in other words, the chart we are looking at here is a  
18 calculation of the number of transactions by the LP Server  
19 wallets compared to the total number in each of those time  
20 periods at the bottom?

21 A. They involve wallets controlled by the LP Server but it is  
22 transactions or transfers created by the LP Server.

23 MR. CALIFANO: No further questions, your Honor.

24 THE COURT: Received.

25 (Plaintiff's Exhibit 206 received in evidence)

03T5sec6

Edman - Direct

1 MR. CARNEY: Has it been admitted, your Honor?

2 THE COURT: It just was.

3 MR. CARNEY: Thank you.

4 BY MR. CARNEY:

5 Q. Can you just describe to us what this chart shows,  
6 Dr. Edman?

7 A. So this shows the proportion of token transfers or native  
8 token transfers on the Terra blockchain created by the  
9 LP Server over time compared to all native token transfers.  
10 So, on the left you can see that in June and July 2019, over 90  
11 percent of the native token transfers on the Terra blockchain  
12 were created by the LP Server.

13 Q. When you say over 90 percent were created by the LP Server,  
14 versus what?

15 A. Versus users of the Terra blockchain.

16 Q. Dr. Edman, based on the materials you reviewed and your  
17 analysis, was the LP Server necessary for Chai to process  
18 transactions?

19 A. No.

20 Q. What is the basis for that opinion?

21 A. The basis for that opinion is, based on my review, the Chai  
22 transactions on the Terra blockchain, along with the LP Server  
23 source code, the LP Server was essentially just replicating or  
24 mirroring Chai transactions onto the Terra blockchain as  
25 opposed to processing and settling those Chai transactions.

03T5sec6

Edman - Direct

1 Q. In connection with your work in this case, were you able to  
2 review the deposition testimony of Paul Kim?

3 A. I did.

4 Q. And at a high level, could you just give us your  
5 understanding of Paul Kim's testimony?

6 A. So my understanding of Paul Kim's testimony, and  
7 considering it in the context of all of the other evidence that  
8 I reviewed in this case, was that Chai maintained its own sort  
9 of internal ledger, sort of like a traditional database that IT  
10 used for verifying Chai users and transactions, account  
11 balances, things like that. The role of the LP Server was to  
12 receive changes to that Chai ledger from Chai and then  
13 replicate those changes in the form of the KRT transactions on  
14 the Terra blockchain. There were several instances in which  
15 either the LP Server went down or wasn't functioning, or the  
16 Terra blockchain wasn't operational, but Chai was still able to  
17 process transactions from Chai customers. And then the Chai  
18 merchants were just settled in fiat currency, Korean Won, as  
19 opposed to KRT in the Terra blockchain.

20 MR. CALIFANO: Your Honor, I want to make a reference  
21 to our earlier motion *in limine* because I have noted that there  
22 was no testimony from Paul Kim on the beginning of Dr. Edman's  
23 answer and I would ask that that be struck because that is  
24 characterization.

25 THE COURT: Well, we will take that up at the break.

03T5sec6

Edman - Direct

1 MR. CARNEY: Thank you, your Honor.

2 BY MR. CARNEY:

3 Q. Did your review of Mr. Kim's testimony cause you to change  
4 any of your opinions in this case?

5 A. No.

6 Q. Why not?

7 MR. CALIFANO: Your Honor, I just want to note a  
8 continuing objection.

9 THE COURT: No, I think this is fair for two different  
10 reasons. One is of course the jury has already heard a  
11 substantial amount or portion of that deposition testimony, but  
12 also because I think it is fairly anticipating  
13 cross-examination and objections that would otherwise be  
14 raised, so overruled.

15 MR. CARNEY: Thanks, your Honor.

16 MR. CALIFANO: Your Honor, my apologies. I should  
17 have referenced the MIL but I understand your ruling.

18 BY MR. CARNEY:

19 Q. Do you need me to restate the question?

20 A. If you could, please.

21 Q. I was asking you whether your review of Mr. Kim's testimony  
22 caused you to change any of your opinions, and I think you said  
23 no, and then I asked why not.

24 A. So my understanding, in consideration of Mr. Kim's  
25 testimony and my understanding of Chai's relation to the Terra

03T5sec6

Edman - Direct

1 blockchain, was that the way he described or the way I  
2 understood him describing the system operating was consistent  
3 with my opinion that Chai transactions were not processed and  
4 settled on the Terra blockchain.

5 Q. And you mentioned a little while ago Chai continuing to  
6 operate if the LP Server or the Terra blockchain were down.  
7 How is that possible?

8 A. My understanding is that there was a component within Chai  
9 called the LP module, and this component was primarily  
10 responsible for sending Chai transaction information over to  
11 the LP Server, the changes to the internal Chai ledger I  
12 mentioned earlier. If the LP Server wasn't operational, the LP  
13 module would just queue those transactions until the LP Server  
14 came online again and then it would send all of that over later  
15 even though Chai had been continuing to process customer  
16 transaction.

17 Q. Did you analyze where the LP Server got the KRT to send to  
18 the Chai wallets?

19 A. I did.

20 MR. CARNEY: Mr. Haywood, if I could ask you to please  
21 display to the witness Plaintiff's Exhibit 300?

22 Q. Did you review this document in connection with your  
23 analysis?

24 A. I did.

25 Q. And what is this document?

03T5sec6

Edman - Direct

1 A. This is another page capture from the public Terra Finder  
2 website showing a transaction to the LP wallet.

3 Q. What is the significance of this particular transaction, if  
4 any?

5 A. The significance of this particular transaction is that it  
6 is a transfer to the LP wallet and the memo field within this  
7 transaction says --

8 Q. Before you get into the content of it, what transaction  
9 does this relate to?

10 A. Based on my analysis of the Terra blockchain data this was  
11 the initial funding for the LP wallet.

12 Q. How did you obtain this document?

13 A. By visiting the public Terra Finder website.

14 MR. CARNEY: Your Honor, I would move for the  
15 admission of Plaintiff's Exhibit 300 into evidence.

16 MR. CALIFANO: No objection.

17 THE COURT: Received.

18 (Plaintiff's Exhibit 300 received in evidence)

19 MR. CARNEY: If we can please publish that,  
20 Mr. Haywood?

21 BY MR. CARNEY:

22 Q. What is the date of this transaction?

23 A. This is, it is at the top; June 10, 2019.

24 Q. Please remind us again, when was the first commit to  
25 Terraform's LP Server git repository?

03T5sec6

Edman - Direct

1 A. That was also on June 10, 2019.

2 Q. What does the memo associated with this transaction say?

3 A. The memo says: Seed funding for the LP node.

4 Q. And what address received the seed funding?

5 A. It was the LP wallet address.

6 Q. Is that the one that begins Terra1FEX9F?

7 A. Yes, it is.

8 Q. What address sent the seed funding?

9 A. You will have to go to the next page, it is under the  
10 "from" address, it is the address: Terra16VS16.

11 Q. Did you review any documentation regarding who controls  
12 that address?

13 A. I did.

14 Q. What did you review?

15 A. I reviewed a spreadsheet, that I understand the defendants  
16 produced in discovery, identifying crypto wallets that either  
17 they or the Luna Foundation Guard represented that they  
18 controlled.

19 MR. CARNEY: Mr. Haywood, if you could please display  
20 to the witness, Plaintiff's Exhibit 331.

21 Q. What is this document, Dr. Edman?

22 A. It is an Excel spreadsheet associating or attributing  
23 certain wallet addresses to either the Luna Foundation Guard or  
24 Terraform labs.

25 Q. How did you obtain this document?

03T5sec6

Edman - Direct

1 A. My understanding is it was produced in discovery.

2 MR. CARNEY: Your Honor, I would move for the  
3 admission of Plaintiff's Exhibit 301 into evidence.

4 MR. CALIFANO: Your Honor, the defendants have no  
5 objection to just the line that identifies the specific wallet.  
6 The rest of it is irrelevant.

7 MR. CARNEY: Your Honor, I don't know that it is  
8 irrelevant because there could come other points in the case  
9 where other wallet addresses are relevant. I mean, this  
10 particular address --

11 THE COURT: No, he is saying he has no objection to  
12 the address, it is just that he doesn't think the rest of the  
13 exhibit is relevant.

14 MR. CARNEY: So, your Honor --

15 THE COURT: Well, do you want to stipulate to this as  
16 an address that was a Terraform-controlled address? Or what.

17 MR. CALIFANO: Your Honor, we are not going to object  
18 to that.

19 THE COURT: OK.

20 MR. CALIFANO: We will be fine with that address.

21 THE COURT: That's all you want, right?

22 MR. CARNEY: That's fine, your Honor. Thank you.

23 THE COURT: So, so stipulated.

24 BY MR. CARNEY:

25 Q. So focusing on that address that's been identified or

03T5sec6

Edman - Direct

1 stipulated as a Terraform address, what conclusion did you draw  
2 from the fact that it was a Terraform address sending this  
3 transaction to the LP Server?

4 A. I concluded that Terraform Labs provided the initial seed  
5 funding for the LP Server.

6 THE COURT: Pursuant to that question I am going to  
7 admit the entire exhibit now that I see the broader context.  
8 So, the exhibit is received.

9 MR. CARNEY: Thank you, your Honor.

10 (Plaintiff's Exhibit 301 received in evidence)

11 THE COURT: How much more do you have on direct?

12 MR. CARNEY: I am trying to finish in nine minutes.

13 THE COURT: What I am thinking is --

14 Ladies and gentlemen, you should understand that  
15 unfortunately we have one out-of-town witness who will take no  
16 more than a half hour but we have to get him in today because  
17 he has to go back to California. So I am inclined maybe to  
18 break now with this witness and you can conclude the direct on  
19 Monday and then we will have cross on Monday as well.

20 MR. CARNEY: OK.

21 THE COURT: So, you can just step down and we will see  
22 you again on Monday.

23 MR. CARNEY: Thank you, your Honor.

24 THE COURT: Monday at 9:30.

25 THE WITNESS: Thank you.

03T5sec6

George - Direct

1                   THE COURT: Why don't you call the next witness.

2 NADER GEORGE,

3                   called as a witness by the Plaintiff,

4                   having been duly sworn, testified as follows:

5 DIRECT EXAMINATION

6 BY MS. CUELLAR:

7 Q. Good afternoon, sir. What is your city and state of  
8 residence.

9 A. Cypress, California.

10 Q. Are you currently employed?

11 A. Yes.

12 Q. How?

13 A. I work as a pharmacist.

14 Q. Did you attend school for that?

15 A. Yes.

16 Q. Where did you go to school?

17 A. Back home in Cairo, Egypt.

18 Q. Now, at some point did you hear about a company called  
19 Terraform Labs?

20 A. Yes.

21 Q. Did you hear about an individual named Do Kwon?

22 A. Yes.

23 Q. Who did you understand Do Kwon to be?

24 A. I understood him to be the CEO of the company.

25 Q. If you can, can you please tell the jury how you first

03T5sec6

George - Direct

1 learned of Terraform Labs?

2 A. That was around January or February of 2022 when I was  
3 looking for a more stable kind of investment that I can invest  
4 my money in and I was looking into to different stablecoins and  
5 I came to UST.

6 Q. And how did you learn of UST?

7 A. I was researching for a stablecoins and I used to read  
8 articles online and watch YouTube videos and that's where I  
9 heard about it.

10 Q. And what did you hear?

11 A. Well, I heard that it is a stablecoin that is always pegged  
12 to the dollar through a mathematical equation -- that I didn't  
13 really understand -- and that it offers people, who buy UST, a  
14 20 percent interest on their investment.

15 Q. After learning that, did you go to the Terraform website?

16 A. I did.

17 Q. What did you see on the website?

18 A. I saw exactly what I heard on YouTube, that UST was  
19 advertised as a stablecoin and that there was something called  
20 Anchor protocol which is part of the project, that if you  
21 deposit your USD in it you will gain a 20 percent annual  
22 interest.

23 Q. How did what you saw on the website influence you?

24 A. It influenced me to start investing in UST. Especially  
25 that I had tried investing in stocks before and I didn't get

03T5sec6

George - Direct

1 the returns that I hoped for, so I thought investing in a  
2 stablecoin that is basically pegged to the dollar, meaning that  
3 it has no risk, will be safer for me to invest my money.

4 Q. And was there anything else on the website you saw that  
5 reassured you?

6 A. On the website itself that is all I remember; is mentioning  
7 that UST is a stablecoin and it is always pegged to the dollar.

8 Q. And were you aware of whether other people had invested in  
9 it?

10 A. I went to the Anchor protocol, actually, to see how much  
11 money is invested in it, and I was surprised to see that at the  
12 time I checked it was \$40 billion invested in Anchor protocol,  
13 which gave me an indication that, you know, many people all  
14 around the world are confident in this project.

15 Q. Now, while you were researching UST and the Anchor  
16 protocol, was there anything you learned that gave you pause?

17 A. Yes. I usually look at the history of the charts and  
18 looking at different stablecoins, I came to understand that  
19 sometimes they depeg from the dollar very briefly and as long  
20 as they repeg back to the dollar, then that should be OK. So I  
21 saw that UST had depegged from the dollar around May of 2021  
22 but then it pegged back very quickly, after which made me think  
23 that this is normal for stablecoins.

24 Q. Based on everything you learned from Terraform and the  
25 Anchor protocol from its website and other sources, what did

03T5sec6

George - Direct

1 you decide to do?

2 A. I decided to try investing in UST so I started with small  
3 amounts totaling around maybe \$10,000 or \$12,000, just to see  
4 how it works and see if I am going to get the return that was  
5 promised, and during that time I was thinking to invest more  
6 but I wanted to take it slowly to make sure that I am doing the  
7 right thing and that was around March, February and March of  
8 2022. And I saw a Tweet by Do Kwon on Twitter reassuring  
9 investors that for UST to depeg from the dollar it is  
10 mathematically impossible and that the depeg risk is  
11 impossible. So, that reassured me more that I chose the right  
12 project to invest in.

13 MS. CUELLAR: Mr. Haywood, if we can display, just for  
14 the witness, Plaintiff's Exhibit 83.

15 (Continued on next page)

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03TASEC7

George - Direct

1 BY MS. CUELLAR:

2 Q. And, sir, if you could look at that computer screen. You  
3 may see it. Do you recognize what is there?

4 A. Yes.

5 Q. And what is that?

6 A. That's the tweet I saw around March 11th. That says if  
7 there's any confusion left at this point --

8 Q. Please don't read it yet. I'm sorry.

9 A. Okay. Sorry.

10 Q. Is that the tweet you were just speaking about?

11 A. Yes.

12 MS. CUELLAR: And, your Honor, at this time we move to  
13 admit Plaintiff's 83.

14 MR. LAFFERMAN: Objection. Relevance. 403.

15 THE COURT: Clearly relevant. Clearly not 403.

16 Received.

17 (Plaintiff's Exhibit 83 received in evidence)

18 MS. CUELLAR: And, Mr. Haywood, if we could please  
19 display to the jury.20 Q. So, sir, after seeing your returns and seeing this tweet,  
21 what if anything did you do?22 A. I decided to take a loan for \$400,000. And around  
23 April 1st and 2nd of 2022, I used that amount of money to buy  
24 UST and deposit it into the Anchor protocol.

25 Q. And after doing that did you keep track of your investment?

03TASEC7

George - Direct

1 A. Yes. I used to look at my investment every single day,  
2 making sure that it is accumulating the daily returns that was  
3 promised.

4 Q. And what if anything happened next?

5 A. Everything was going fine until around May 9th of 2022, I  
6 started getting notifications from YouTube channels saying that  
7 the UST is depegging from the dollar.

8 Q. And what if anything did you do next?

9 A. The first thing that came to my mind is that that's  
10 probably the same that happened the year before and it's going  
11 to peg back to the dollar very quickly, and I was reassured by  
12 tweets from Do Kwon himself saying, for example, "deploying  
13 capital-steady lads" and that he's working on restoring the  
14 peg.

15 MS. CUELLAR: And, Mr. Haywood, at this time if we  
16 could just display for the witness Plaintiff's Exhibit 353.

17 Q. Sir, do you recognize that exhibit?

18 A. Yes.

19 Q. What is it?

20 A. It's that tweet that I saw on May 9th reassuring investors  
21 that Do Kwon is working on restoring the peg to the dollar.

22 MS. CUELLAR: And, your Honor, at this time we move to  
23 admit Plaintiff's Exhibit 353.

24 MR. LAFFERMAN: No objection.

25 MR. CHESLEY: No objection.

03TASEC7

George - Direct

1 THE COURT: Received.

2 MS. CUELLAR: And if we could please display to the  
3 jury.

4 BY MS. CUELLAR:

5 Q. So, sir, what happened next?

6 A. At that time, I didn't really believe that my -- I'm going  
7 to lose my investment, and I believed Do Kwon that like what  
8 happened in 2021, this should be a brief depeg. So I kept on  
9 holding to my UST for a few more days until I -- until I saw  
10 that it's falling really away from the dollar.

11 Q. And what if anything did you do at that point?

12 A. At that point, I had to move all my UST to a cryptocurrency  
13 exchange and sell all of my UST to try to save any of my  
14 investment.

15 Q. And what happened next?

16 A. After I sold, I kept on seeing tweets again from Do Kwon  
17 reassuring that he's very close to having a recovery plan.

18 MR. CHESLEY: Objection. Relevance.

19 THE COURT: Overruled.

20 A. So I kept on panic buying and panic selling because I was  
21 hopeless at that moment. And my whole body was shaking  
22 thinking what have I done to my family, I wanted to use this  
23 money to help my kids with their education. And now I'm seeing  
24 it being, you know, lost in front of my eyes.

25 Q. And, sir, how much do you have left of your \$400,000

03TASEC7

George - Direct

1 investment?

2 A. I was able to recover only \$28,000.

3 MS. CUELLAR: Mr. Haywood, we can take down the  
4 exhibit.

5 Q. Sir, when you chose to invest in UST, did you believe your  
6 investment would be stable?

7 A. Yes.

8 Q. Why?

9 A. Because that's the definition of a stablecoin and that's  
10 what Do Kwon had reassured many times through different tweets  
11 that the depeg risk of UST is mathematically impossible.

12 Q. Now, sir, did you know when you invested that a third party  
13 had intervened in May 2021 to purchase large amounts of UST in  
14 an effort to help restore UST's peg to \$1?

15 MR. CHESLEY: Objection, your Honor.

16 THE COURT: Overruled.

17 A. I had no idea.

18 Q. Is that information you would have wanted to know prior to  
19 investing?

20 A. Of course.

21 Q. Why?

22 A. Because if I had known that the depeg that happened in 2021  
23 was restored through anything else other than the algorithm  
24 itself, I wouldn't have invested in UST.

25 MS. CUELLAR: No further questions, your Honor.

03TASEC7

George - Cross

1 THE COURT: Cross-examination.

2 MR. CHESLEY: Yes, your Honor.

3 CROSS-EXAMINATION

4 BY MR. CHESLEY:

5 Q. Good afternoon, Mr. George. My name is Andrew Chesley.

6 I'm an attorney for Do Kwon.

7 A. Good afternoon.

8 Q. I want to make sure that we are clear on the reasons that  
9 you bought and held UST.

10 The first reason was that you were unhappy with the  
11 return you got on the stock market and thought you might do  
12 better in crypto?

13 A. I might do better with stablecoins.

14 Q. Yes. And another reason was that you saw lots of people  
15 online putting money into Anchor; is that fair?

16 A. Correct.

17 Q. And you learned about UST initially from YouTube; is that  
18 right?

19 A. Correct.

20 Q. I know it's been a couple of years, but can you recall any  
21 specific YouTube channels where you first learned about UST?

22 A. I don't remember. I just search on YouTube and whatever  
23 came out I started watching.

24 Q. You also said that you read some things online about UST  
25 before you went to Terraform's website?

O3TASEC7

George - Cross

1 A. Correct.

2 Q. Do you recall any of the things that you read online or  
3 where those were from before you went to Terraform's website?

4 A. No. It was just a Google search.

5 Q. And you said on direct examination that you wanted to buy  
6 just a small amount of UST to take it slow; is that right?

7 A. Correct.

8 Q. And after you bought your first \$10,000 of UST and staked  
9 it in Anchor, you saw returns that you expected and that caused  
10 you to decide to buy more?

11 A. Correct.

12 Q. You also testified on direct that you saw a tweet in  
13 March 2022 in which Mr. Kwon said that Terraform would keep  
14 growing reserves until a depeg becomes mathematically  
15 impossible; is that right?

16 A. Correct.

17 Q. And you relied on that tweet in deciding to purchase more  
18 UST after your initial purchase?

19 A. Yes.

20 Q. And those are all the reasons that you initially purchased  
21 UST?

22 A. Those are the reasons that I chose UST over other  
23 stablecoins, yes.

24 Q. Did I leave any reasons that you choose UST over any other  
25 stablecoins out?

03TASEC7

George - Cross

1 A. The 20 percent interest that was promised, because other  
2 stablecoins did not have this kind of return.

3 Q. So besides the reasons that I gave and the 20 percent  
4 interest, did I leave any other reasons out?

5 A. No.

6 Q. And then you testified that during the May 2022 depeg you  
7 decided to hold onto your UST because of the tweet that you saw  
8 and that you were shown on direct examination in which Mr. Kwon  
9 said that he was deploying capital to defend the peg; is that  
10 right?

11 A. Correct.

12 Q. Mr. George, you filed a lawsuit against a cryptocurrency  
13 exchange in 2022, correct?

14 MS. CUELLAR: Objection, your Honor. Relevance.

15 MR. CHESLEY: It will be brief, your Honor.

16 THE COURT: Overruled.

17 Q. Do you need me to repeat the question, Mr. George?

18 A. Please.

19 Q. You filed a lawsuit against a cryptocurrency exchange in  
20 2022, correct?

21 A. Correct.

22 Q. That crypto exchange was called Okcoin?

23 A. Correct.

24 Q. You bought some of your UST on Okcoin, correct?

25 A. Yes.

O3TASEC7

George - Cross

1 Q. In your lawsuit against Okcoin, you claim that Okcoin  
2 misled you about the stability of UST?

3 A. Yes.

4 Q. And you stated in your lawsuit that you relied on Okcoin's  
5 definition of a stablecoin?

6 A. To buy from Okcoin, yes.

7 Q. To your knowledge, Okcoin has no relationship with  
8 Terraform Labs or Do Kwon?

9 A. Yes.

10 Q. Mr. George, are you familiar with a Korean mobile payments  
11 company called Chai?

12 A. No.

13 Q. And, Mr. George, on direct you testified that before buying  
14 UST you learned that UST had briefly lost its dollar peg; do  
15 you recall that testimony?

16 A. Yes.

17 Q. And you also learned that UST regained its peg a couple of  
18 days after it depegged?

19 A. I don't remember how many days, but very quickly, yes.

20 Q. Understood. And you took that repegging, the recovery of  
21 the peg, as a sign that UST's peg was stable and reliable?

22 A. Yes.

23 Q. At the time you were purchasing UST in early 2022, you  
24 didn't know how UST regained its peg in May 2021?

25 A. Yes.

O3TASEC7

George - Cross

1 Q. At the time that you were purchasing UST in early 2022, you  
2 don't recall any statements from Terraform Labs or Do Kwon  
3 explaining why UST regained its peg in May 2021?

4 A. No, I don't recall any.

5 Q. You testified on direct that at some time after you  
6 purchased you came to understand -- my apologies. Strike that.

7 You testified on direct that you would not have  
8 purchased -- you may not have purchased UST had you known that  
9 a third-party company intervened to defend the peg; do you  
10 recall that testimony?

11 A. Yes.

12 Q. You've never spoken to Do Kwon, have you, Mr. George?

13 A. Never.

14 Q. You've never spoken to any employee of Terraform Labs?

15 A. Never.

16 Q. You've never -- have you ever heard of a company called  
17 Jump Crypto?

18 A. I have heard of it afterwards, yes.

19 Q. But at the time -- or strike that.

20 You've never spoken to any employee of Jump Crypto?

21 A. No.

22 Q. You've never examined any computer code from Terraform Labs  
23 or from Jump Crypto?

24 A. No.

25 MS. CUELLAR: Objection, your Honor. Relevance.

03TASEC7

George - Redirect

1 THE COURT: Marginal, but I'll allow it.

2 MR. CHESLEY: Do you need me to repeat the question,  
3 Mr. George?

4 THE COURT: No. He said no.

5 MR. CHESLEY: Thank you, your Honor.

6 Q. So it's fair to say, Mr. George, that you have no direct  
7 knowledge that a third-party company intervened to defend the  
8 peg in May 2021?

9 A. Correct.

10 MR. CHESLEY: Thank you, Mr. George. No further  
11 questions.

12 THE COURT: Okay. Any redirect?

13 MS. CUELLAR: Briefly.

14 REDIRECT EXAMINATION

15 BY MS. CUELLAR:

16 Q. Sir, when you were panic buying and selling, did you  
17 believe UST would regain its peg?

18 A. At that moment, I had lost any hope that it will regain the  
19 peg because it was going down so fast.

20 Q. When it first started depegging in May of 2022, did you  
21 believe UST would regain its peg?

22 A. In the beginning, yes, that's why I waited for a few days.

23 Q. Why did you believe it would repeg?

24 A. Depending on the -- what happened in 2021 and relying on Do  
25 Kwon's tweets reassuring that he's working on restoring the

03TASEC7

George - Redirect

1 peg.

2 Q. Now, if you had known a third party had intervened in May  
3 of 2021 --

4 MR. CHESLEY: Objection. Asked and answered.

5 THE COURT: Yeah, I think that was asked on direct.

6 MS. CUELLAR: It was asked, your Honor. I think cross  
7 made it unclear. I was just clarifying.

8 THE COURT: No, I think it was asked and answered.

9 MS. CUELLAR: Okay. No further questions. Thank you.

10 THE COURT: All right. Very good. Thank you very  
11 much. You may step down.

12 THE WITNESS: Thank you, your Honor.

13 THE COURT: So I see Juror No. 5 looking at her watch.  
14 Is this guy going to let us go finally or not. And the answer  
15 is yes. So thank you for your good service, ladies and  
16 gentlemen. We'll resume at 9:30 on Monday. On Monday, we'll  
17 again go to 4:30. On Tuesday and Wednesday, we'll probably  
18 only go to 3:30. So just to give you a heads up. Have a very  
19 good weekend, a Happy Easter, and we will see you on Monday.

20 (Continued on next page)

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03TASEC7

George - Redirect

1 (In open court; jury not present)

2 THE COURT: All right. Anything counsel needs to  
3 raise?

4 MR. PELLEGRINO: Briefly, your Honor. We have a brief  
5 motion regarding Plaintiff's Exhibit 83 if we can pull that up.  
6 We just want to clarify something, your Honor.

7 THE COURT: Okay.

8 MR. PELLEGRINO: So this was the one that  
9 Mr. Lafferman objected on 401 and 403 grounds. Your Honor very  
10 forcefully responded it's relevant. I think we were trying to  
11 adhere to your Honor's rules, but we probably should have added  
12 a one sentence thing that the objection was a reference to the  
13 pretrial order and it not being a false statement in the  
14 pretrial order. I understand why it comes in. He said he  
15 relied on it or considered it. Our motion would be that they  
16 not close on it or at least not reference it as a false  
17 statement. It's not one that's listed in the pretrial order.

18 THE COURT: Ah, okay. That is a different point than  
19 the one I considered when I made the rulings. So let me think  
20 about that over the weekend.

21 MR. PELLEGRINO: Thank you. And that was our fault.  
22 We were trying to figure how to do we clarify that without --

23 THE COURT: Yeah. Remind me on Monday and I'll rule  
24 before the jury comes in.

25 MR. PELLEGRINO: Thank you, your Honor.

03TASEC7

George - Redirect

1                   MR. FERRARA: Your Honor, the same is true as to  
2 Plaintiff's 353 as well, the second exhibit they showed to  
3 Mr. George.

4                   THE COURT: I want to think about it but just to flag  
5 it for you.

6                   MS. CUELLAR: Your Honor, they did not --

7                   THE COURT: There's a difference I think between a  
8 statement that they are relying on as a false statement to make  
9 out their claims of fraud, in other statements that the jury  
10 could consider as bearing on intent, even though they are not  
11 themselves forming one of the essential elements of the claims.  
12 So I'm not sure there's anything in the motion *in limine* that  
13 precludes the admission. But I'll think about it some more.  
14 We can discuss it more on Monday.

15                  Now, I would suggest that you spend a portion of the  
16 weekend reading the extremely interesting opinion by Judge  
17 Failla in *Securities and Exchange Commission v. Coinbase*, which  
18 came out two days ago, which you might find of some interest.

19                  Anyway, anything else we need to take up today? Very  
20 good. Thanks so much.

21                  (Adjourned to April 1, 2024, at 9:30 a.m.)

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1 INDEX OF EXAMINATION  
2

	Examination of:	Page
3	JAMES HUNSAKER	
4	Direct By Ms. Meehan . . . . .	843
5	Cross By Mr. Henkin . . . . .	868
6	Cross By Mr. Chesley . . . . .	894
7	MATTHEW EDMAN	
8	Direct By Mr. Carney . . . . .	904
9	NADER GEORGE	
10	Direct By Ms. Cuellar . . . . .	967
11	Cross By Mr. Chesley . . . . .	975
12	Redirect By Ms. Cuellar . . . . .	980

## 1 PLAINTIFF EXHIBITS

2	<u>Exhibit No.</u>	Received
3	659 . . . . .	851
4	658 . . . . .	852
5	203 . . . . .	928
6	297 . . . . .	933
7	302 . . . . .	946
8	309 and 310 . . . . .	948
9	209 . . . . .	953
10	205 . . . . .	956
11	206 . . . . .	958
12	300 . . . . .	963
13	301 . . . . .	966
14	83 . . . . .	971